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BIENNIAL REPORT

of the

University of Maryland

and

The Maryland State Board of Agriculture



Official Publication of the University of Maryland

Vol. 25

December, 1928

No. 12

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BIENNIAL REPORT
of the
University of Maryland
and
The Maryland State Board of Agriculture

From September 30, 1926 to October 1, 1928

Including a summary of the work and needs of the University of Maryland, the Agricultural Experiment Station, the Extension Service, the State Board of Agriculture, and other branches of work under the jurisdiction of the University and State Board of Agriculture.



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LETTER OF TRANSMITTAL

*His Excellency, Governor Albert C. Ritchie,
and the General Assembly of Maryland,
Annapolis, Maryland.*

Sir and Gentlemen: The Board of Regents of the University of Maryland and the Maryland State Board of Agriculture herewith render a report of the work of the several departments under their jurisdiction for the last two years.

Very truly,

SAMUEL M. SHOEMAKER,

*Chairman, Board of Regents of the University of Maryland and the
State Board of Agriculture.*

December 31st, 1928.

BOARD OF REGENTS

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* To fill out unexpired term of Robert Crain, appointed in 1924.

General Introduction

The Board of Regents, University of Maryland:

Gentlemen: I am herewith transmitting to you the biennial report of the various departments of the University of Maryland. This report largely is made up of reports by heads of the various units of the University, and this general introduction will deal very briefly with the University in its broad aspects.

The last two years have marked rapid progress in all departments of the University. This does not mean that there have been radical changes in the operation or purpose of departments, but rather that steady progress has been made in carrying out successfully the objects for which the departments are established. Generally speaking, the University has grown in all its work. It is educating on its campus both in College Park and in Baltimore greater numbers of students, and in its service departments, namely, extension, research and regulatory, it is reaching more and more into every community in the State.

The growth of any organization depends largely on the success with which it functions in carrying out the purpose for which it was created. It is, therefore, indeed, a source of satisfaction to the Board of Regents and to the administrative staff and faculty and alumni of the University to know that the University of Maryland owes its progress mainly to the success it attains in this way.

It would be well to mention here the Charter under which the University exists. It is unquestionably true that the consolidation of all of the work of the institution, including the State Board of Agriculture, under one board has worked wonders for successful operation. For this reason Maryland has not been confronted with many of the difficulties encountered in other States. The Charter under which it operates generally is recognized as one of the best possessed by Universities of the country.

President Woods just before he retired to accept the position as Director of Scientific Research of the Department of Agriculture of the United States Government said:

"Recent legislation has tended to a considerable extent to centralize the control of appropriations in the Governor and State Comptroller. This is accomplished through the State Budget system. While in the hands of enlightened officials this system is an advantage to the University and to the State, it would be possible under it greatly to hamper if not destroy the University. Looking forward to the time

when attempts might be made as they have been in other States, to control the University by some partisan group, it would be well to protect its financial interests by a constitutional provision for a definite part of the tax rate to be expended by the Board of Regents for the educational conduct of the University. An increasing number of States have done this, and while, as a rule, it does not meet all the financial needs, the balance can be taken care of as the need develops, by legislative enactment. It does furnish a certain reasonable assured income on which the work of the University can be based."

Since my tenure of office, I have found that the present system has worked satisfactorily, and that the Governor and State Comptroller have been very fair and sympathetic in their attitude toward the University. However, Dr. Woods' statement that it is possible for the University to suffer considerable harm seems to me to be worthy of careful and serious consideration. And it might be well for the Board of Regents to give this consideration, with a view to working out a policy for recommendation to the Governor and Legislature to provide an income for the University on such a definite basis that the risk of political or partisan interference would be eliminated. Such a policy would have to take into consideration the entire relationship of the University to the State, and be established on a basis which would provide an increasing income commensurate with a gradual growth.

The University has need for better and more equipment and for more equitable maintenance funds. However, these needs, presented to each Legislature, are being met as rapidly as State officials and the Legislature feel that the State is able to provide for them.

The last Legislature made provisions for two major needs. The most important was a new building in Baltimore to house the Dental and Pharmacy Schools, and the building should be ready for occupancy next fall, giving these two schools facilities and equipment suitable for doing a much better grade of work. The other was a library building at College Park. It is expected that this building will be erected within the next few months. The State also provided money for a system of roads on the campus at College Park. The roads have been constructed and the campus is very much improved.

The outstanding needs of the University at present in Baltimore involve a new hospital and physical equipment, better facilities for the Medical School, and a new law building; while at College Park the major needs are a central heating plant, a dormitory for girls, a horticultural building, an addition to the engineering building, a general garage and service plant, a building to house the State biological work, and for carrying on other phases of education in animal industry.

One great need, of course, that every University has is constant improvement in its teaching personnel. The value of University work

cannot rise any higher than the caliber of the men who are handling it, and every opportunity should be given men who are teaching to keep abreast the most modern developments in their special branches.

There seems no doubt that the University has found a place in the life of the State in which it is rendering services repaying many-fold the money the State is investing in it. Not only is this true, but it is equally as certain that these services will be continuing and so effective that greater and greater demands for them will be made by the people of the State.

Respectfully,

R. A. PEARSON,
President.

The College of Agriculture

To the President of the University of Maryland:

The College of Agriculture is organized under twelve separate departments. Each of these departments conducts research, instruction and some extension. The departments are as follows:

1. Agricultural Economics.
2. Agricultural Engineering.
3. Agronomy—Crops and Soils.
4. Animal and Dairy Husbandry.
5. Animal Pathology, Bacteriology and Veterinary.
6. Botany and Plant Pathology.
7. Farm Forestry.
8. Farm Management.
9. Entomology and Apiculture.
10. Horticulture—Pomology, Olericulture, Floriculture.
11. Plant Physiology.
12. Poultry Husbandry.

Classroom and Laboratory Requirements

As soon as proper accommodations can be provided for the departments in other colleges now quartered in the Agricultural Building, more space should be given to some of the departments of the College of Agriculture.

The research of the departments keep most of the laboratories in use most all of every day throughout the year. The number of hours scheduled for classes usually represents but a small part of the laboratories actual use. The time required for the preparation of laboratories for classes is usually more than the length of the period assigned to the class. Then, too, experiments must be kept set up for days and even weeks at a time for one class, which precludes the use of the laboratories for different classes and different subjects. In much of the specialized work in agriculture the dual purpose laboratory is like the dual purpose cow—not practical. The bringing together of some of the scattered departments would enable them to be operated more efficiently and economically.

Land, Buildings, Equipment and Maintenance

The requirements for land, buildings, equipment and maintenance for the College of Agriculture as set forth in the last biennial report have not been provided and become more and more urgent each year.

Student Enrollment

The agricultural depression and the press reports concerning agriculture have had a tendency to discourage students from preparing for agricultural pursuits.

Farming in Maryland is advancing and the future would seem to offer a bright outlook. It is true that some local circumstances and the returns from some commodities have been very discouraging almost every year. These isolated and local conditions may occur at any time; yet farming as a business in Maryland, on the average, is better than it has ever been. According to all standards and measures, all farm and rural communities are advancing. The homes are more satisfying, the schools, churches, stores and roads are good and improving. Banks are increasing in numbers and resources.

These facts, together with the demand for men trained in Scientific Agriculture, in the industries and commercial enterprises, should encourage young men to take agriculture. The agricultural courses also give good fundamental training and serve as a good basis for specializing in many subjects.

Data as to the demands for graduates in agriculture is given in the last biennial report and still holds. The enrollment* in the College of Agriculture has not changed greatly in the past nine years.

| 1920-1 | 1921-2 | 1922-3 | 1923-4 | 1924-5 | 1925-6 | 1926-7 | 1927-8 | 1928-9 |
|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 107 | 107 | 107 | 135 | 130 | 117 | 122 | 123 | 133 |

Cost of Instruction

The opportunities for men and women trained for specialized work and who have had a basic training in agriculture has made it necessary, in order to test the validity of the demands, to offer some subjects and courses for the benefit of a few students. This condition always exists when new courses, work or enterprises are undertaken. This fact, together with the usual agricultural demands found in small States having a small student enrollment, and also with a wide range and varied farming systems, has made the cost of instruction per student hour relatively high.

Larger number of students per class would reduce the relative cost; but it must also be recognized that satisfactory work in many subjects requires that the classes be limited in size. The equipment required and materials consumed also increase the cost of instruction in many of the agricultural courses.

This matter of cost of instruction per student hour is being given close study and will form the basis for some future recommendations.

*Excluding Federal Board (soldier rehabilitation) students.

The nearness of College Park to the U. S. Department of Agriculture should make it possible to avail of their specialists for courses of lectures and thus strengthen the work, offer all the courses necessary without increasing the number of full-time regular teachers.

Graduate Courses in Agriculture

This University is exceptionally located for graduate courses. The initial work of this character may be relatively expensive, yet it is of great value and should be encouraged. As the opportunities here are developed and become known students will probably come in as large numbers as can be handled in such courses.

Short Courses

The College of Agriculture has tested the demand for short courses and offered such courses in a number of ways.

Short courses in general agriculture and on specialized farming have been offered many times. The length of the courses has been varied from one week to 10 weeks. Some years ago these courses were attended by fairly large numbers, but with the development of the agricultural courses in the high schools and extension work, the old-fashioned short course did not seem to be needed.

Short courses for specialized farmers held in sections where these types of farming predominated have proven very worthwhile. The dairy farmer is glad to avail of the short course given in his home community, but he cannot leave home to go to the University for one week. These short courses in the State have been given in co-operation with the Extension Service. A highly specialized short course for commercial orchard fruit growers and one for canners has been given. These courses have been well attended and well received. They seem to be filling a special need. It is probable that it will be desirable to only offer these courses at intervals of two or three years.

Meat Packers Course

The College of Agriculture has co-operated with the Baltimore Meat Packers and The Institute of American Meat Packers in offering a course in meat packing. This work has been conducted three winters. The courses have consisted of twelve lectures covering a period of twelve consecutive weeks. The course in 1926 was given by Mr. C. V. Whalen of the U. S. Department of Agriculture, in 1927 by Mr. W. B. Peppler of Corkran Hill Company and Mr. R. H. Funke of Schludenburg, Kurdle Company, and in 1928 by Mr. J. P. Healy of Swift & Co. W. E. Hunt, Assistant Animal Husbandman, has supervised the details of the course and been present at all the lec-

tures. There were 26 students enrolled in 1926, 35 in 1927, and 40 in 1928. These courses have been helpful to the students and enabled the Department of Animal Husbandry to make valuable contacts.

Student Organization

The students of the College of Agriculture maintain a Student Grange, a Horticultural Club, a Live Stock Club and an honor fraternity, Alpha Zeta.

Membership and work in these is voluntary and no college credits are given for work done in them; yet much of the training obtained in them is fully as valuable as that gotten from regularly prescribed courses.

The Student Grange represents the great national farmers' fraternity of the Order of Patrons of Husbandry, and in their work they emphasize "Training for Rural Leadership." They sponsor much deputation work in local granges throughout the State. The Horticultural Club sponsors the Horticultural Show in the fall, and the Live Stock Club the Fitting and Showing Contest in the spring. Both of these exhibitions are very creditable and worthwhile University functions. They give valuable training and inspiration to the students.

Alpha Zeta—National Agricultural Honor Fraternity

Membership in this fraternity is chosen from the students in the College of Agriculture after an earnest agricultural motive and executive ability has been demonstrated. This organization fosters good scholarship and to that end awards a gold medal to the member of the freshman class in agriculture who makes the highest record during the year.

Respectfully,

H. J. PATTERSON,
Director and Dean.

The Agricultural Experiment Station

To the President of the University of Maryland:

The Experiment Station began its forty-first year July 1, 1928. During the period of its existence it has made many valuable contributions to agriculture and has been an important factor in the development of better farming and bringing more satisfactory conditions to the farm community and farm home. The results of agricultural research have contributed during this period to raising the average yield of wheat from 13.3 bushels to 19.1 bushels per acre; of corn from 23.5 bushels to 39.0 bushels per acre; of hay from 1.15 tons to 1.43 tons per acre. The quality of the hay has been increased. The use of crimson clover and cow peas as soil improvers and forage has been greatly extended. Soy beans were introduced in this State by the Experiment Station and now they are grown on about 60,000 acres annually. Soy beans on many of the lands in the tidewater sections can replace and prove more profitable than wheat in the rotation. The Experiment Station has had an important part in developing the growing of fruit on a commercial scale in the western and central parts of this State. Methods for the protection of fruits and crops from diseases and insects have been developed and adopted largely as a result of the Station's work. The Station work has been an important factor in promoting better dairying through better cows, better feeding and better housing.

The investigations in feeding farm animals called the attention of farmers to need of balanced rations. The work of this Station on the food value of the different parts of the corn plant was responsible for a better utilization and appreciation of the corn crop.

The Station has published 298 bulletins giving the results of its investigations. These pertain to every phase of farming followed in Maryland and may be classified as follows:

| | | |
|------------------------|----|-----------|
| Animal Diseases | 6 | Bulletins |
| Barley | 4 | " |
| Beef Cattle | 3 | " |
| Bees | 1 | " |
| Clover, Sweet | 1 | " |
| Corn (Field) | 14 | " |
| Corn (Sweet) | 3 | " |
| Dairy Cows | 11 | " |
| Dairy Products | 14 | " |
| Drainage (Land) | 2 | " |
| Feeds and Feeding..... | 14 | " |

| | | |
|--|----|-----------|
| Fence Posts | 2 | Bulletins |
| Fertilizers (General Crops)..... | 21 | " |
| Fertilizers (Horticultural Crops)..... | 4 | " |
| Floriculture | 3 | " |
| Fruits (Small) | 13 | " |
| Fruits (Orchard) | 16 | " |
| Greenhouse Management | 8 | " |
| Hay and Forage Crops..... | 7 | " |
| Insects | 40 | " |
| Lime | 6 | " |
| Oats | 3 | " |
| Plant Diseases | 11 | " |
| Plant Physiology | 10 | " |
| Potatoes (Irish) | 20 | " |
| Potatoes (Sweet) | 3 | " |
| Poultry | 16 | " |
| Roadside Markets | 1 | " |
| Seed Investigations | 17 | " |
| Silo and Silage..... | 2 | " |
| Soils and Soil Surveys..... | 30 | " |
| Soy Beans | 1 | " |
| Speltz and Emmer..... | 1 | " |
| Spraying | 13 | " |
| Stable Manure | 5 | " |
| Swine | 6 | " |
| Tobacco | 7 | " |
| Tomatoes | 11 | " |
| Vegetables | 13 | " |
| Washing Powders | 1 | " |
| Weeds | 1 | " |
| Wheat | 13 | " |

It is the policy to conduct investigations at different points in the State as well as at College Park. This plan enables much work to be carried on under the same soil and climatic conditions found on the farms when special cropping systems predominate. It also enables more farmers to observe the progress of the experiments. Investigations are now in progress at 58 points. Work is in progress on 190 different projects. The details of the Experiment Station activities, since the last biennial report, have been given in the Fortieth and Forty-first Annual Reports. The investigational projects are organized both by departments and around an industry.

The following research departments are maintained:

- Agricultural Economics.
- Agronomy—Crops and Soils.
- Animal and Dairy Husbandry.
- Animal Pathology and Bacteriology.
- Entomology.
- Home Economics.
- Horticulture—Pomology, Vegetable Culture and Floriculture.
- Plant Pathology.
- Poultry Husbandry.
- Seed Inspection.

PROGRESS MADE ON FARM PROBLEMS

When an investigation has been completed or progressed far enough to give some worthwhile results a report is published in the form of a bulletin or through the medium of some journal. It may be of interest, however, to mention here some facts which have developed in connection with the work in progress.

Agricultural Economics Investigations:

A detailed study, for a period of three years, of the production, packing and distribution of canned products has disclosed the following facts:

1. The yield of sweet corn is about the same in the producing sections.
2. The western section of the State produces about 300 pounds more peas per acre than the Eastern Shore sections.
3. That Harford County produces on the average twice as many tons of tomatoes per acre as the Worcester County growers. The per ton cost of production is about in this same proportion.

A study of the canning factory shows:

1. Unsound financing.
2. Poorly standardized products.
3. Unsatisfactory quality.
4. Inadequate sales policy.
5. Lack of market information.
6. Need for reducing of manufacturing costs.

A study of the marketing of live stock in Maryland has shown both favorable and unfavorable conditions to prevail, as follows:

Favorable conditions:

1. Well equipped and appointed stock yards.
2. Prompt unloading, handling, feeding and watering of stock.
3. Stock well graded.
4. Well organized reconsignment houses.
5. Prices good as other markets.

Unfavorable conditions:

1. Too much selling on credit.
2. More commission merchants than necessary for volume of business.
3. Hour for opening of market not always observed.
4. Lack of efficient market reporting service.
5. Producers not well acquainted with Baltimore market.
6. Producers do not know market demands.
7. Prices on prime cattle not as good as some other markets.
8. Mixed shipments of cattle and sheep, cattle and calves, cattle and hogs, causes loss.

An historical study of the prices of farm products from 1851 to 1925 has been completed. This will soon be published. It discloses useful information on farm commodity cycles and changes in cropping systems.

Agronomy (Crop and Soil) Investigations:

The work of this department is divided into four groups, viz.: Crop production, crop breeding, soil technology, and soil classification and management. Results show that yield of wheat and topography are closely associated. That tidewater areas and the low valleys should be planted to wheat of the Fulcaster type and for high lands with good air drainage the smooth wheat of the Fultz types do best.

The best yielding oats for Southern Maryland are: First, Culberston; second, Custis; third, Turf; fourth, Lee. Yields ranged from 40 to 65 bushels per acre. The Maryland farmers in purchasing clover seed should give preference to seed grown the following places: Maryland, Ohio and Tennessee.

Virginia and Wilson soy beans are recommended for Maryland.

The breeding of sweet corn has developed some strains with superior yielding records, but they lack certain other desirable qualities.

A study of the effect of heavy applications of lime to Kentucky Blue Grass on old and new lawns have shown that the heavier the application of lime the better the grass and the smaller the per cent of weeds.

Animal and Dairy Husbandry Investigations:

A test of ground vs. unground soy bean hay for cows proved that grinding was not profitable.

Alfalfa hay gave better results than soy bean hay as a feed for fine-wool ewes and their early lambs.

Animal Pathology and Bacteriology:

The results on projects 1 and 2 are ready for publication. This department has given a valuable service to the farmer by preparing and supplying them with legume inoculums, tuberculin, hog cholera serums, and making tests of cows for the presence of the germs of abortion and tests of poultry for white diarrhoea.

This laboratory has prepared and distributed the following products:

| | 1926-27 | 1927-28 |
|---|--------------|--------------|
| Autogenous bacterins | 8,855 c.c. | 16,225 c.c. |
| Legume inoculum | 10,366 tubes | 8,414 tubes |
| Tuberculin, both subcutaneous and intradermal | 20,800 c.c. | 14,454 c.c. |
| Products purchased and distributed at approximate cost: | | |
| | 1926-27 | 1927-28 |
| Anti-hog-cholera serum | 677,450 c.c. | 572,450 c.c. |
| Hog cholera virus | 1,195 c.c. | 480 c.c. |
| Syringes | 22 | 19 |
| Thermometers | 0 | 1 |
| Disinfectant | 22 gals. | 10 1/8 gals. |
| Miscellaneous articles | 30 | 47 |

The following examinations of animals or materials have been made, some of which necessitated field trips:

| | 1926-27 Number | 1927-28 Number |
|---|-------------------|-------------------|
| Water analyses | 104 | 108 |
| Hog cases | 289 | 942 |
| Milk analyses | 1,232 | 1,226 |
| Mastitis in cattle..... | 82 | 136 |
| Rabies | 29 | 15 |
| Parasites | 401 | 220 |
| Contagious abortion tests..... | 2,116 | 3,883 |
| Anthrax | 0 | 2 |
| Tuberculosis | 331 | 234 |
| Sheep diseases | 396 | 77 |
| Blackleg | 2 | 10 |
| Botulism | 0 | 4 |
| Johne's Disease | 14 | 187 |
| Physical examinations of animals..... | 0 | 45 |
| Post-mortem examinations | 78 | 57 |
| Agglutination test Brucella abortus Homo..... | 0 | 2,433 |
| Periodic ophthalmia | 0 | 28 |
| Miscellaneous diseases and examinations..... | 198 | 334 |
| Field trips | 94 | 106 |
| Miles traveled | 6,914 | 6,430 |

At the James Todd Laboratory the following examinations have been made for poultry diseases, as well as chemical analyses performed:

| | 1926-27 | 1927-28 |
|--|---------|---------|
| Feeding tests in cases of suspected poisoning..... | 9 | 4 |
| Examinations for parasites..... | 53 | 110 |
| Infectious bronchitis | 1 | 6 |
| Fowl typhoid | 3 | 8 |
| Roup | 5 | 4 |
| Tumors | 1 | 10 |
| Blood test for bacillary white diarrhoea..... | 130 | 4,178 |
| Blackhead | 2 | 11 |
| Chemical analyses | 19 | 20 |
| Bacillary white diarrhoea (Bact. Exam.) | 4 | 36 |
| Miscellaneous | 78 | 58 |

Entomology Investigations:

As a result of the research in this field, methods and appliances for spraying and dusting for the control of insects are becoming more and more efficient. There is a big demand for information and need for investigations as new insects appear in formidable numbers.

Horticultural Investigations:

Many of the investigations in this field are being conducted in the fruit and vegetable centers of the State. The following results are worthy of special note:

1. Heavy applications of nitrogen fertilizers will reduce the amount of cultivation necessary for apple orchards.

2. Proper use of fertilizers and lime will increase strawberry yields.
3. A change of system of grape pruning during the first two years will give a full crop one year sooner.
4. Proper cross-pollination will increase apple yields.
5. Peach orchards low in vigor can be rejuvenated by proper pruning and following good orchard management.
6. A lighter system of pruning young peach orchards will greatly increase yields.
7. Studies in setting orchards favor the fall planting of apples; the spring planting of peaches and are unfavorable to root pruning.
8. Several promising early colored apples have been produced by the breeding work.
9. Studies on sweet potatoes show that acid soils should be limed and that applications of potash are necessary on many soils.
10. Commercial fertilizers gave as good yields and better profits than stable manure when applied to asparagus.
11. The introduction of a hardy blight resistant spinach in the sections growing this crop has proven of great value.

Plant Pathology Studies:

This department has made substantial contributions to Maryland farms by isolating and introducing wilt resistant strains of tomatoes, cabbage and Alaska peas.

Suggestions for the control of tobacco mosaic is ready for press.

Plant Physiology Studies:

This department has continued to conduct fundamental studies. This work has established principals which when put in practice will better conditions for the storage of potatoes and other vegetables. Results obtained in studies of sweet corn and tomatoes will prove helpful in improving the quality of the canned products. Some studies on the mineral nutrient deficiencies of plants seem to show that many plants need very small amounts of some elements usually thought unessential in order to make a healthy growth. These studies suggest the need of some radical revision of the usual teachings of plant nutrition.

Poultry Investigations:

Few people realize that in Maryland the gross sales of poultry and eggs are about the same as the sales from the dairy herds. The net returns are probably more, as the investment and expenses of operation are less. The poultry problems are numerous and merit a better equipment and more for maintenance than is provided at present.

The egg laying contest has created an increased interest among poultry breeders and is bringing out some important lessons. White Leghorns have produced eggs at a lower cost than any other breed in the contest. The popular farm breed Barred Rocks, stood third in cost of eggs per dozen and Rhode Island Reds fourth. There seems to be no definite correlation between body weight and egg production.

SEED INSPECTION

The work of the seed inspection laboratory is mostly of a regulatory character, but it has always been necessary to conduct some investigations in order to improve methods and correlate the tests with field practices.

The work of the seed laboratory for the calendar years 1927 and 1928 can be briefly summarized as follows:

| | Number of Samples | | Number of Purity Analyses | | Number of Germination Tests | | Number of Nox. Weed Exam. | | Number of Identifications | | Number of Tobaccos Cleaned | |
|----------------------------|----------------------|------|---------------------------------|------|-----------------------------------|------|---------------------------------|------|------------------------------|------|----------------------------------|------|
| | 1927 | 1928 | 1927 | 1928 | 1927 | 1928 | 1927 | 1928 | 1927 | 1928 | 1927 | 1928 |
| Collected Samples | 609 | 602 | 1218 | 1204 | 1256 | 1328 | 352 | 367 | | | | |
| Submitted Samples | 793 | 1327 | 419 | 559 | 677 | 1259 | 46 | 17 | 9 | 9 | 105 | 95 |
| Co-operative Samples | 45 | 22 | 13 | 7 | 74 | 43 | | | | | | |
| Total..... | 1447 | 1951 | 1650 | 1770 | 2007 | 2630 | 398 | 384 | 9 | 9 | 105 | 95 |

Of the 419 purity analyses of submitted samples of 1927, 19 were mixtures. Of the 559 purity analyses of submitted samples of 1928, 53 were mixtures. Many State laboratories as well as the U. S. D. A. Laboratory will not analyze mixtures because of the time and the difficulty of making such analyses. Commercial laboratories charge from \$5.00 to \$10.00 for such analyses.

In addition to the above work which may be considered routine, we prepared and sent out the 1927 Referee Samples of the Association of Official Seed Analysts and compiled the results of that work. During both years the inspectors have continued the assembling of duplicate germination test data, and have compiled over 50,000 at this time. During 1928 there were assembled and classified over 2,000 samples of seed for a reference collection which has been badly needed by the laboratory. The designing of needed germination chambers has taken a great deal of time during the past year.

RESEARCH PROFITABLE

Agriculture, in common with other industries, finds that research is profitable. A survey of a large number of industries shows that they are expending on the average about 3% of their gross sales on research.

Maryland has expended only a small fraction of 1%, and yet the annual returns from results obtained amount to many millions. The main hope for permanent relief and upbuilding of agriculture must come through research.

NEEDS FOR RESEARCH

Most of the needs outlined in last year's report remain in force. Farm problems are developing faster than the Experiment Station can solve them. The effort to meet this condition has caused the staff to undertake more than facilities and resources justify. If all demands are to be satisfied the Station must have more men, more land, more laboratories, more equipment and more for the maintenance of research. The Agronomy, Animal Husbandry and Horticultural Departments must have more land and equipment if they are to do efficient and satisfactory work.

On behalf of the staff I extend to the President of the University and the Board of Regents their appreciation for your help and interest in their work.

Respectfully submitted,

H. J. PATTERSON,
Director.

The College of Arts and Sciences

To the President of the University:

The Triennial Report issued as of October 1, 1926, indicated the growth, value and needs of the College of Arts and Sciences. In many respects this report for the Biennium ending as of October 1, 1928, emphasizes those points, but it adds also a few additional facts.

The enrollment for the year 1925-26 was 456, while for the year 1927-28 it was 549, or 50% of the total undergraduate enrollment at College Park. The enrollment in September, 1928, indicates that approximately 600 students will enroll for the academic year 1928-29.

The enrollment in the other colleges of the University has also increased, and with this increase additional work has fallen to the lot of the Faculty of this College, since all of their students take courses offered by the College of Arts and Sciences.

A large proportion of the course work taken by students enrolled in the Graduate School of the University is likewise given by members of the Faculty of this College, as is the extra curricular work in Chemistry given at night in Baltimore to members of the technical staffs in the various industries, who have found it both interesting and beneficial.

Although there is no Extension work given under the direct supervision of the College of Arts and Sciences, course work, radio talks, and addresses at various gatherings have been given by members of the Faculty of this College at the request of the Director in charge of the Extension Service.

The Faculty of this College is also responsible for the undergraduate Arts and Science courses outlined for and required in the Freshman and Sophomore classes of the School of Dentistry and the School of Pharmacy in Baltimore. The portion of the staff which undertakes this work resides in Baltimore for the most part, but some instructors give courses both in College Park and Baltimore.

Since the requirements for entrance into the Professional Schools of Law, Medicine, etc., have been raised and made more rigid, the College of Arts and Sciences has established in College Park pre-medical, pre-law and pre-nursing curricula, which not only enable the student to meet the requirements for entrance into the Professional Schools but, when entered, to combine, under certain conditions, these courses with those of the Professional Schools in Baltimore and obtain the Bachelor's Degree while working for the Professional Degree.

The value and importance of the College of Arts and Sciences is patent. A further analysis will emphasize the previous statement and the additional fact that the character of a University is largely dependent on the quality of the work in Arts and Sciences. In 1927-28 the student enrollment in colleges throughout the United States increased only about 2%, while the enrollment of this College was approximately 20%, indicating not only the marked growth of this College but the increasing tendency of the students of the present day to pursue studies in the Arts and Sciences as preparation for life. The extent of the load borne by the Faculty of this College in teaching students in the other Colleges of the University is clearly shown when it is pointed out that from 40% to 80% of the course work for the other undergraduate Colleges in College Park is given by the aforesaid Faculty and that approximately 40% of the load of this same Faculty, reckoned in student hours, arises from teaching students in Colleges other than the College of Arts and Sciences. Finally the total number of student hours taught by this Faculty is, in round numbers, 14,500.

The course work outlined by the Faculty of this College has for its objects the teaching of one *how to live* as well as *how to make a living*, and also the construction of the intellectual foundation upon which professional and technical courses are built. It is obvious, therefore, that if the University is to fulfill its function in the most efficient manner, the College of Arts and Sciences must be properly manned and fully equipped.

During the past Biennium no attempt has been made to increase the number of Departments because in the present stage of development it has been thought more important to strengthen and stabilize the existing Departments than to establish new ones. At the same time, sight has not been lost of the fact that there is a demand and need for more courses in Philosophy, Ethics and the Classics. The scarcity of funds has made it difficult and in some cases impossible properly to man the existing Departments. In fact, in several instances, instructors of proven worth have accepted positions elsewhere because the salaries in the University were inadequate and, further, at the salaries available, it has been difficult to replace them with instructors of equal ability and experience. At the present time, if the most efficient work is to be done, the increase in the student body demands the services of more instructors than are now employed, and this in practically all of the Departments. Funds have been requested not only to provide those additional instructors but also for the necessary additions to the clerical force. Further, if music is to be fostered at the University, either from the cultural point of view or to meet the growing demand for instructors in music in the High Schools, funds must be provided to secure the services of a properly qualified

director and competent assistants to establish the Department of Music and also to purchase suitable equipment.

The question of space is most important. At the present time the Dean has no separate office and if he desires a private conference with anyone must request the other occupant of the office to withdraw or himself seek an unoccupied room elsewhere. The Secretary occupies one-half of a small office. Offices, classrooms and laboratories for the various Departments are badly needed. The completion of the new Chemistry building added one lecture room for large classes, and offices and laboratories for the Department of Chemistry. The reconstruction of the old Chemistry building for the College of Home Economics should afford some relief as regards classrooms both in that building and in the space in the Agricultural building previously occupied by the College of Home Economics. However that may be, it is imperative that definite additional space be provided, and preferably through the erection of an Administration building and the Science building already requested.

The completion of the Library, authorized by the last Assembly, will afford relief, but the space thus provided for books will be of little value unless funds are also provided for the purchase of the additional reference books needed in the intellectual development of students in Chemistry, Physics, English, History, Zoology, Modern Languages, Economics, Sociology, etc. There is also a need of funds for the development of Departmental Libraries.

In the last Triennial Report reference was made to the closing of the School of Business Administration in Baltimore. Opportunity was afforded students of the upper classes in the School in Baltimore to finish their work at Johns Hopkins University and to receive the Bachelor's Degree or Certificate from the University of Maryland. In 1927 three students and in 1928 two students received the Degree of Bachelor of Science in Business in accordance with the provisions mentioned. There were also seven Certificates in Business issued each year. As to the Curriculum in Business Administration authorized and opened in this College when the School of Business Administration in Baltimore was closed, it is meeting very satisfactorily the growing demand for this type of education.

Various Articles, Book Reviews and Bulletins have been published by members of the Faculty of this College during the Biennium. In addition, Dr. A. E. Zucker, Professor of Modern Languages, has at present in press the "Life of Henrik Ibsen" and has edited "Western Literature," two volumes of "Western Poetry," and "Thoma's Lokalbahn"; and Dr. H. B. Crothers, Professor of History, has published "Virginia and the French and Indian War."

The pressing future needs of this College may be classified as follows:

- I. *Salaries*—Salaries are needed which are sufficiently large to insure the retention of the services of competent teachers, investigators and productive scholars, and, when vacancies occur, as they will from time to time, sufficiently attractive to enable the authorities to engage successors of equal or greater capacity in any particular field. Provision should be made also for the employment of additional members of the Faculty when needed.
- II. *Teaching Staff*—The increase in the student body demands an increase in the number of teachers of the Arts and Sciences if instruction of the highest type is to be provided. This demand will increase as time passes unless the size of the student body be limited.
- III. *Physical Equipment*—Sufficient space for offices, classrooms and laboratories through the erection of new buildings, or a re-allocation of space in existing buildings should be provided for the proper conduct of the activities of this College.
- IV. *Reference Books*—The correct mental development of the students taking courses offered by the members of the Faculty of this College is possible only if additional reference books and periodicals for the new College Library and the Departmental Libraries are obtained through the allocation of funds for that purpose.

Respectfully submitted,

T. H. TALIAFERRO,
Dean.

College of Education

To the President of the University:

Since the last biennial report was issued, the College of Education has shown the same "gradual and healthy growth" noted in that report. Within the limits imposed by restricted space, equipment and personnel, the College of Education is performing well the purposes for which it was organized in 1917 and which were stated in detail in the last biennial report.

The Summer School, although organically distinct from the College of Education, is administered by the Dean of the College of Education and is, in effect, an administrative division of that College.

Enrollment—The following summary shows the increase in enrollment biennially to 1924-25 and annually for the past four years.

ENROLLMENT

| Year | College | Extension Courses | Degrees Conferred | Summer Session |
|--------------|---------|-------------------|-------------------|----------------|
| 1918-19..... | 14 | ..... | 3 | ..... |
| 1920-21..... | 39 | ..... | 5 | 208 |
| 1922-23..... | 75 | 121 | 15 | 446 |
| 1924-25..... | 99 | 85 | 20 | 454 |
| 1925-26..... | 118 | 146 | 25 | 477 |
| 1926-27..... | 131 | 142 | 28 | 572 |
| 1927-28..... | 139 | 183 | 36 | 626 |

In addition to the 139 students regularly enrolled in the College of Education in 1927-28, approximately 30 students enrolled in the College of Agriculture and 35 students enrolled in the College of Arts and Sciences were pursuing, under the supervision of the faculty of the College of Education, the curricula in Agricultural Education and in Arts and Science Education in fulfillment of the requirements for the Teachers' Special Diploma. Of this number 19 were seniors. Thus a total of 54 actually received the Teachers' Special Diploma in 1928.

Of this number 40, or 75%, are now teaching or are taking advanced university work preparatory to college teaching. Thirty of these are teaching in the Maryland public schools; two are on the instructional staff of the University; three are teaching in other States, and five are in four different graduate schools. Of the fourteen not now teaching, four report that on account of ill health or family obligations they were unable to teach this year, but hope to

do so next year; two are farming; three are in scientific work; one each in the army air service, the Library of Congress and in a law school. Two merely report as married.

Personnel—The personnel is practically the same as reported in the last biennial report. One part-time instructor and critic teacher for Modern Languages under the co-operative arrangement with the Hyattsville High School has been added. The principal of the school has been added to our staff as Administrative Co-ordinator.

Supervised Teaching—Under our State law, "observation and practice teaching of high school subjects" is an indispensable requirement for the high school teacher's certificate. In this, it is in line with other progressive States. Observation and practice teaching are the heart of good teacher training. This part of our program has been carried on since 1920 in co-operation with the Hyattsville High School. The advantages and disadvantages of this arrangement were discussed fully in my last biennial report. The most serious disadvantage is that the high school is two miles from the University. This fact entails a great waste of time on the part of both instructors and students, as well as a considerable expense for transportation. It further restricts the amount of observation of teaching that can be effectively offered to students, as student schedules cannot easily be arranged so as to allow numerous consecutive periods for observation. The present arrangement is working about as satisfactorily as such a co-operative plan can be expected to work.

It was further pointed out in the last biennial report that the addition, new at that time, to the Hyattsville High School, would take care of the increased enrollment for not more than two or three years. This prediction is verified by the event. The school is now up to its capacity. Additional high school facilities will soon have to be provided in this vicinity.

To economize time of instructors and students and to ensure consistently good results we should have a University High School, owned by the University, and controlled and operated by the College of Education. It should provide space: (1) for a high school of approximately 300 students, and (2) for College of Education classes and offices. A floor space of approximately 45,000 square feet is needed. It should specifically take care of all the high school pupils in Vocational Agriculture and Vocational Home Economics in this part of Prince George's County. A careful survey of the situation shows the aggregate number of such pupils will not be in excess of eighty (80) within the next ten years. The advantage of close proximity to the University resources in Agriculture and Home Economics are self-evident. This would allow space for two hundred and twenty (220) pupils in the general high school branches.

Departments of Instruction

The last biennial report contained a full description of the organization, the functional activities and the needs of the several departments of instruction in the College of Education. In this report, therefore, it is necessary merely to summarize the salient points of the former report and to note new developments within the biennium.

Department of General Education—The term “general education” designates the courses in education that are fundamental in the preparation of all teachers, whether of the customary high school subjects or of the newer subjects such as agriculture and home economics; and also the advanced courses in educational psychology, administration and research.

Three essential needs in connection with this department were set forth in the last report. These needs have become more insistent within the past biennium.

(1) There is a very real need for a post-normal school curriculum in elementary education leading to a degree. This need can be met by the addition of a professor of elementary education to have charge of the courses in the organization, curriculum and supervision of elementary education. The other essentials of a curriculum leading to a degree in elementary education can be supplied from the present offerings of the University.

(2) There is an increasingly heavy demand upon the College of Education for graduate work. This demand comes chiefly from teachers in service who must have graduate work to meet the requirements for certificate renewal, for the high school principal's certificate and for other supervisory positions in the public school system. The most of these students do their course work in the summer sessions, but the direction of their special studies for thesis purposes is a responsibility of the regular instructors. Within the past two years the number of such students registered in the graduate school has increased from 36 to 70. There has been no increase in the instructional staff of the College of Education available for graduate work. The burden of performing this important service is becoming too heavy for the present staff. An addition to the staff of a man in educational administration who is trained in present-day methods of educational research would go far towards meeting this need.

(3) For the past four years the College of Education has assumed the responsibility of conducting and interpreting the preliminary college ability tests administered to all freshmen at entrance. It has furnished the personnel and material for this service. The results of these tests have proved to be of much value as a supplementary means of judging the probable success of the entering students and will be continued and improved. There are other phases of institutional re-

search that would be undertaken by the College if resources were adequate. A beginning has been made of one such study: Comparison of the high school records of students with their subsequent college records. This study is in a preliminary stage. Other studies of similar character and import will be undertaken as resources become available. The appointment of a research man, as noted above, would constitute an important and essential addition to our resources for this work. The other essentials are additional clerical service, funds for contingent expenses, and better space accommodations.

Arts and Science Education

The courses in methods and supervised teaching in the academic high school subjects, under the designation Arts and Science Education, are included as a sub-division of the Department of General Education. This work is for senior students. At the time of the last report, there were 30 such students and three supervising teachers, employed jointly by the University and the County School Board. At present there are 42 such students and four supervising teachers. The subjects for which special methods and practice teaching are provided are: History and the social studies; English; mathematics; science; and modern language. The number of students in history and the social studies has increased to a point where one supervising teacher cannot supervise the practice teaching in this subject. An assistant critic teacher in this subject is urgently needed not later than next year.

Some advances in salary will be necessary for members of this department. Also, there should be a readjustment in the proportionment of the salaries paid jointly by the University and the County School Board. The University should pay a larger proportion of the salary than it now pays.

Department of Agricultural Education and Rural Life

In the past ten years this department, in charge of Professor H. F. Cotterman, has performed an important and effective service not only in preparing teachers of vocational agriculture but also indirectly in preparing county agents for the Extension Service, as frequently county agents are recruited from the teachers of vocational agriculture in the State. The enrollment in this department continues to increase: from 26 in 1923-24 and 40 in 1925-26 to 53 in the first semester of the present year (1928-29). In addition to caring for these students enrolled in the Agricultural Education Curriculum, the department carries its quota of basic courses in the Department of General Education and in the Summer School. As in former years, the Professor of Agricultural Education has continued to "follow up," by personal visitation at least once a year, those graduates who have been employed within the State as beginning teachers.

In the past biennium a beginning has been made in organizing a program of graduate work in Agricultural Education in connection with the Summer Session. In this project the co-operation of the College of Agriculture has been generous and sympathetic. This University has a unique opportunity for development in this field. We are close to the United States Department of Agriculture, with its unrivalled resources. Further, there is no institution in this immediate vicinity offering an adequate graduate program in Agricultural Education. The development of such a program here would be an asset not only to the College of Education but even more to the College of Agriculture in the development of its graduate work. The specific need is for funds for the employment each summer of one or two outstanding men to supplement the staff of the department and some additional aid for the staff of the College of Agriculture. The additional expense would not be great and a part of that expense could be met out of Smith-Hughes funds.

For the undergraduate work the most urgent need, as was stated in the last biennial report, is laboratory space at the department headquarters for housing and operating the equipment and materials necessary for the most effective instruction. Because of this deficiency the equipment now possessed cannot be used to its full effect. A small increase in funds for salaries of present personnel and for contingent expenses is needed.

Department of Home Economics Education

The Professor of Home Economics Education, Miss Edna B. McNaughton, is now able to devote her entire time to the work of this department. This has been made possible through the appointment of a full-time State Supervisor of Home Economics, a need which was noted in the last biennial report.

The work of this division includes instruction in Technic of Teaching, Education of Women, Methods and Practice in Teaching Home Economics, and Child Study work.

The Teacher Training work is given at the University by the Professor of Home Economics Education with practice teaching in the Vocational Department at the Hyattsville High School. The instructor in this high school department acts as critic teacher and is a member of the staff of the College of Education. Students have opportunity to secure experience in conducting home project work and in teaching various units required of home economics teachers in secondary schools. The organization of this department was described in the last biennial report.

The Child Study instruction has developed rather extensively during the past year. The University now offers a course in Child Care, stressing the mental and emotional as well as the physical develop-

ment of the child. Opportunity for observation and for work with pre-school children is made possible through the co-operative arrangement with the Washington Child Research Center. It is also possible for students to elect advanced courses in this work.

One phase of the Teacher-Training work has been the teaching of a unit of Child Care in High Schools. Special emphasis has been placed upon this work, in order that teachers may be prepared to teach this subject as it finds a place in high school curricula.

Department of Industrial Education

Up to the present year the Professor of Industrial Education has been jointly employed by the University and the State Department of Education, the proportionment of time being approximately three-fourths to the former and one-fourth to the latter. This year he is devoting all of his time to the University work. All of this work is done in Baltimore and includes teacher-training courses for the improvement of teachers in service and foremanship conferences in industrial plants. For two years a very successful program of foremanship training was carried on in co-operation with the plant of the General Electric Company under the direction of Professor Leland. This program is temporarily suspended on account of the change in the General Electric plant in regard to the type of product to be manufactured and the transfer of many of the employes to another city. It is possible that the program may be resumed after the new plans of the company are fully organized and in operation.

There has been a marked increase in the teacher-training activities within the biennium. The curriculum offerings have been better organized, the number of offerings has been extended and the number of teachers taking advantage of the opportunities has increased. A two-year curriculum has been worked out with the aid of the Vocational Education division of the City Department of Education to meet certain well-defined needs. A four-year curriculum leading to a degree is under consideration. The need for such a curriculum is fairly plain and the problem of organizing and administering such a curriculum is being studied.

The work in Baltimore has been carried by the Professor of Industrial Education with the aid of part-time instructors from the Division of Vocational Education of the City.

Up to this time no work in industrial education has been done at College Park. The development of a program for the training of teachers of industrial education at College Park must be seriously considered. The expanding program of industrial education in Baltimore and the increasing interest in this aspect of public school education in the county high schools is creating a demand for industrial teachers. At present there is no source of supply within the State.

This problem is being studied carefully and plans for establishing a curriculum in Industrial Education are in process of formulation.

PHYSICAL EDUCATION, MUSIC EDUCATION, COMMERCIAL EDUCATION

The University is not meeting the demand for these three forms of teacher preparation.

Physical Education—In the last biennial report it was stated that a modest beginning had been made in the Summer School towards meeting the demand for courses in physical education, "but there is urgent need for a department and a professor of Physical Education. For the immediate future he could serve also as Director of Physical Education for the University in charge of special and correction work." This need is even more urgent now. There is an increasing demand not only for special teachers of physical education but also, and perhaps more important, for teachers for the small high schools who combine preparation in academic subjects with preparation in physical education. Also, more students are asking for this kind of preparation. Finally, the new regulations of the State Department of Education governing certification of teachers of physical education and "other teachers" require four years of college work.

Music Education—The preceding statement in regard to physical education applies with equal force to Music Education.

Commercial Education—Under the old certification requirements for commercial teachers (two years of college work) there has been a deficiency in the supply of such teachers. The new requirement (four years of college work) will tend to increase this deficiency unless immediate steps are taken to supply the demand. A special curriculum should be established, open to graduates of commercial departments of high schools who have acquired sufficient preparation in stenography, typewriting and bookkeeping. Such students would be required to maintain their skill in these branches by summer employment in commercial establishments or part-time employment. The only necessary addition to our personnel would be an instructor on the co-operative plan with the Hyattsville High School, to have charge of the work in Special Methods and Supervised Teaching. The other curriculum needs would be met by the present offerings of the University.

Placement Service—At present the University has no organized placement service for its graduates. Much effective placement service is rendered by the several colleges and departments within the colleges. The College of Education needs additional assistance for its work of this kind. This need would be met by the appointment of an

additional member of the staff to devote part time to this service and part time as instructor to relieve pressure in courses with overloaded enrollments; and a part-time clerical assistant. A placement service so organized not only would serve the College of Education but also would supplement the efforts of the other colleges and departments.

Summary—The College of Education within the limits of its equipment and personnel has progressed satisfactorily during the past biennium both in numbers and usefulness as measured by the variety and extent of its services. The needed additions to our personnel are a Professor of Education Administration whose work will be largely research and the direction of research; a Professor of Elementary Education; a Professor of Music Education; an instructor-critic teacher for Commercial Education; an assistant critic teacher for history; additional part-time instructors in Industrial Education; provision for placement service; additional clerical service; and provision for additional assistance for Summer Graduate work in Agricultural Education. Some salary increases will be required to hold the present staff. The immediate urgent equipment need is for additional laboratory and classroom space devoted exclusively to College of Education purposes. The future need is for an Education Building as specified above, a need that should be met within the next five years.

Respectfully submitted,

W. S. SMALL,
Dean.

THE SUMMER SCHOOL

To the President of the University:

The program of instruction in the Summer School is planned primarily to meet the needs of teachers in service and of students desiring to satisfy the requirements for undergraduate and graduate degrees.

The enrollment and distribution of students for the years 1926-1928 is as follows:

| Enrollment | 1926 | 1927 | 1928 |
|---------------------------------|------|------|------|
| Men | 136 | 178 | 205 |
| Women | 341 | 394 | 421 |
| Total..... | 477 | 572 | 626 |
| Group Distribution: | | | |
| Undergraduates | 72 | 85 | 86 |
| Graduate Students | 48 | 74 | 103 |
| Elementary School Teachers..... | 285 | 294 | 343 |
| High School Teachers..... | 74 | 117 | 123 |
| Residence Distribution: | | | |
| Maryland | 376 | 466 | 491 |
| Outside Maryland | 101 | 106 | 135 |

Of the total enrollment of 626 in 1928, 466, or 74%, were teachers. Of the teachers enrolled, 123, or a fraction less than 20% of the total, were high school teachers. The experience of the past biennium re-emphasizes the statement in the last report that an increasing number of the teacher-students are registering as candidates for degrees and that similarly there is an increasing number who register in the Graduate School. The table above shows an increase of graduate students from 48 to 103. Of the 103, 70 were teachers. The importance of this phase of summer school work has been covered in the current report of the College of Education. Similarly the need for a post-normal curriculum leading to a degree in Elementary Education has been emphasized. It is referred to here because the summer session will play an essential part in operating this program.

The demonstration schools, both high and elementary, have been improved. They are now serving reasonably well for observation purposes, but the high school is inadequate for practice teaching. The chief difficulty is in offering a six weeks' program of studies that will attract a sufficient number of high school pupils to provide facilities for both observation and practice teaching.

Among the improvements, continued or initiated during the bien-nium, are: Further development of the policy of providing courses in sequence over a series of sessions; the policy of retaining as far as possible the special summer school instructors from year to year; the development of a systematic program for music instruction, especially for the high school; and further development of graduate courses, especially in Chemistry, History, Modern Languages and in Agricultural Education and the related Agricultural sciences. The increased revenues have made it possible to meet most of the increasing demands for expansion of the program of courses and for more equitable compensation of instructors.

Respectfully submitted,

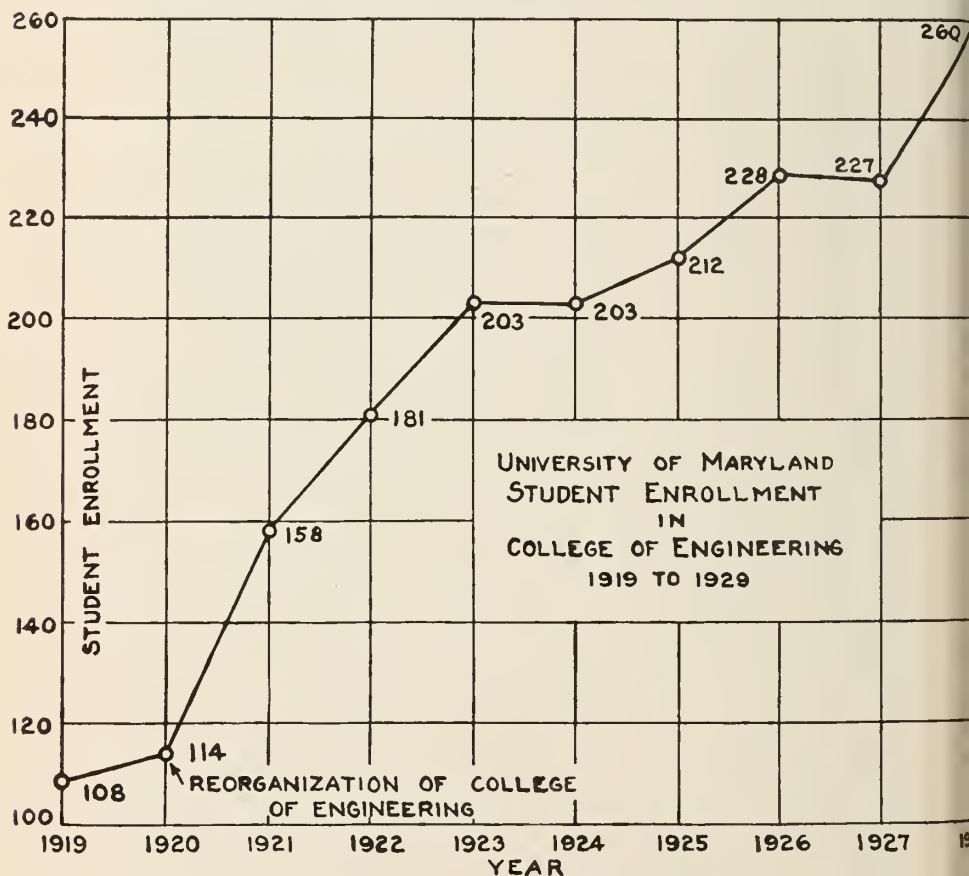
W. S. SMALL,
Director.

THE COLLEGE OF ENGINEERING

To the President of the University:

The objective of the Engineering College is to train young men for useful careers in the field of engineering and thus to open for the youth of Maryland the same opportunities that are afforded to the youth of other States by their State-supported institutions.

The record made by many of the graduates of the Engineering College has been noteworthy and they have received recognition by promotion in many of the largest industrial enterprises, which maintain special corps of engineers, in competition with graduates from engineering schools in all parts of the country.



The student enrollment in the College of Engineering since its reorganization in 1920 shows a continued increase, and accentuates more acutely the condition noted in the last triennial report, where

it was stated that the number of students at that time already taxed the facilities of the instruction staff and classrooms. In 1919 the enrollment was 108; in 1927, 227, and in 1928 was 260. The chart printed herewith shows graphically the enrollment by years from 1919 to 1929.

The faculty of the Engineering College has passed a rule that the grades secured by a student in the mathematics and physics courses of the freshman and sophomore years in the second semester must be not less than grade C before he may take up the engineering courses of the junior year. Experience has shown that students who did not obtain a grade of C or better in these subjects were unable to carry on satisfactorily the work of the junior year.

The courses in public speaking have been arranged on an unique plan as regards the students in the College of Engineering and have attracted much favorable comment. The public speaking courses constitute a four-year program which is progressive. The senior work, which takes the form of special meetings, is participated in by all the students in the Engineering College. The results have been particularly satisfactory. A description of these courses was the subject of a paper by the Dean of the Engineering College before the Land Grant College Convention held in November, 1928, in Washington.

The results of research work on the physical properties of concrete, extending over a period of six years, have been published in a series of articles which appeared in the fall of 1928 and early in 1929 in the Public Roads Magazine, the official research bulletin of the United States Bureau of Public Roads.

Extension classes for miners in the coal fields in Western Maryland have continued with success. Interest in this work has been maintained and receives the combined support of mine officials and mine workmen. Classes included members from each of these groups.

These mining courses are conducted in close co-operation with the Maryland Bureau of Mines. The total enrollment for the five-year period is 1,251. There were 111 certificates of attendance awarded in May, 1928, at the fifth annual banquet of the night mining classes held in Frostburg.

The Bureau of Mines states: "From statistics at hand on increased earnings of men who have attended the Night Mining Classes and have later received promotion in their work, the increased earnings are conservatively estimated at \$52,000 per year." What is of greater importance is the further fact that "in five years not a fatal accident has occurred among men who have enrolled in the Night Classes. The records of the Bureau of Mines show that the mine accident rate among students is 78% lower than the rate among men not attending the classes."

January 26, 1929.

THE GRADUATE SCHOOL

To the President of the University:

The Graduate School was established ten years ago with a total enrollment of twelve graduate students and organized graduate instruction leading to both the Master's and Doctor's degree was undertaken. The growth of this school is indicated by a total enrollment of 199 graduate students for the year 1927-1928. When the institution assumed the name and functions of a university it assumed the responsibility for instruction at all levels in higher education. It must also contribute to the creation of knowledge, otherwise our instruction would soon become sterile.

The constantly increasing demand for men and women who have pursued intensive graduate study in a restricted field and who are trained in the methods of research and creative scholarship is imposing a greater responsibility upon our universities. The University of Maryland, through the agency of the Graduate School, is endeavoring to meet this responsibility and thereby accomplish one of the important functions of an institution for higher education.

The Maryland law requires that the principals of standard high schools must have had at least one year of graduate work. High school teachers must be college graduates and in addition one-third or one-fourth of these teachers are required to attend summer school every year. This means that each teacher is obliged to attend summer school every third or fourth year. Since the teachers of this class are already college graduates, their instruction both in education and in the subjects they teach must be of the graduate level. Because of the rising spirit of professionalism on the part of our public school teachers, they are demanding even more than the law requires, and the demand is increasing each year. During the summer of 1928 there were one hundred and three high school principals and high school teachers enrolled in the Graduate School as candidates for the Master's degree.

Graduate work equivalent to either the Master's or Doctor's degree is required of practically all college and university teachers. The Graduate School trains young men and women for careers as college and university teachers.

Many of the men and women who have received advanced degrees in the Graduate School are now discharging important duties as scientific specialists and experts in agriculture and other industries, in

public health laboratories, and in the service of the State and Federal governments.

The Graduate School is training men especially for agricultural research in the State Experiment Stations and in other government and private agricultural research agencies. Our agricultural problems are becoming more and more complex and are demanding, for their solution, men of high scholarship and training in the methods of research in their chosen field. Because of the close proximity to the great library resources of the National Capital and the splendid co-operation of the United States Department of Agriculture, the University of Maryland is in a position to offer unusual opportunities for graduate work in Agriculture.

Many of the industries are now demanding men trained for industrial research. The demand of the University of Maryland has been especially for men trained for research in the chemical industry, a very important industry in Maryland.

Since most of our graduate students are candidates for the Master's degree, requiring only one year of full-time residence, the Graduate School has a large turnover of students each year. The enrollment and degrees conferred, by years, for the past two years are shown in the following table:

| Year | ENROLLMENT | | | | DEGREES CONFERRED | | | |
|--------------|-----------------|----------------|--|-------|-------------------|------|-------|-------|
| | Regular Session | Summer Session | Graduate Courses in Chemistry in Baltimore | Total | M.S. | M.A. | Ph.D. | Total |
| 1926-27..... | 73 | 73 | 26 | 172 | 17 | 9 | 4 | 30 |
| 1927-28..... | 74 | 103 | 22 | 199 | 20 | 8 | 7 | 35 |

The future expansion and growth of the Graduate School will depend largely upon the strength of the various faculties of instruction and research and also upon the growth of the material facilities of the University. It has been the policy of the Graduate School to limit the enrollment of graduate students to the number that the qualified departments are able to properly direct in effective graduate work. This policy, together with the careful selection of our graduate students, has limited the total enrollment in the Graduate School, but I believe we are thereby building upon a solid foundation for future growth on a high plane of proficiency in graduate work.

One of the requirements for a higher degree in the Graduate School is the preparation of a thesis or dissertation. This is frequently based upon some phase of a research project related directly to the agricultural and other industries of the State. The students who major in the field of Education investigate important problems pertaining to public education in the State. In this way the graduate students assist very materially in the solution of problems that are of great importance to the Commonwealth. The scope of the problems investi-

gated by graduate students is shown in the following list of titles of theses submitted during the past two years:

ADVANCED DEGREES AND TITLE OF THESIS

Class of 1927

BROOKENS, P. F., *Ph.D.*

Foreign Competition in the Dairy Industry of the United States.

FLENNER, A. L., *Ph.D.*

The relative electronegativity of organic radicals and its use in interpreting certain organic reactions.

ORDEMAN, D. T., *Ph.D.*

Adverbs and Adverbial Constructions in "Beowulf."

VANDEN BOSCHE, E. G., *Ph.D.*

The potential of the nickel Electrode.

BARRON, E. M., *M. A.*

The attitude of the people of Maryland during the French and Indian War.

BENNETT, B. H., *M. S.*

Production, Distribution and Consumption of Whole Milk in the City of Baltimore.

CLEMENT, E. W., *M. A.*

A study of some plane transformations with particular reference to the group of rotations.

CRIDER, B. M., *M. A.*

The Poets Laureate of the American States.

DILLMAN, A. C., *M. S.*

The Daily Growth of the Flax Seed with special reference to the time at which the Oil is laid down.

ENGLE, R. B., *M. S.*

The Effect of Castration upon the Palatability of Market Lamb.

ENSOR, H. E., *M. S.*

A Dietary Study of the Food Served in the Dining Hall of the University of Maryland from January 3, to March 27, 1927.

FABER, J. E., *M. S.*

Differences in Bacterial Count of Raw and Pasteurized Milk Plated on Extract Agar with Different pH Values—Range 6.2; 6.4; 6.6; 6.8; and 7.0.

HAMBRIGHT, W. A., *M. S.*

Infectious Abortion and Its Effect on the Maryland Agricultural Experiment Station Herd.

HOOPES, J. D., *M. S.*

The Cost of Milk Production in the Maryland Agricultural Experiment Station Herd.

HUDNUT (CROTHERS), R. A., *M. A.*

The Status of Women as Reflected in the Modern Novel.

HOWLAND, L. B., *M. A.*

Developments in Grading and Subjects and Steps in Adoption of Free Text Books in the Public Schools of Maryland Outside Baltimore City, from 1865 to the Present Time.

HUFFINGTON, P. E., *M. A.*

A Study of Marks of High School Pupils of Prince George's County, Maryland, for 1925-1926.

JONES, C. A., *M. S.*

Lime Movement, Buffer and Absorptive Capacity in Some Coastal Plain Soils.

KERR, W. L., *M. S.*

Cross and Self-Pollination Studies with the Peach.

KNIGHT, P., *M. S.*

The Head Capsule of the Soldier Termite.

LIEBERMAN, S., *M. S.*

Numerical Determination of Leucocytes in Milk.

PYLES, J. T., *M. A.*

The Picaroon, or Rogue Type, in English Fiction of the Eighteenth Century.

SAVAGE, M. E. *M. A.*

Methods in Handling Juvenile Offenders in Maryland.

SHEPARD, H. H., *M. S.*

The Biology and Control of the Corn Earworm.

SMITH, C. L., *M. S.*

Studies on Respiration in Parsnips.

SMITH, W. V., *M. A.*

The Causes of the Revolution in Tidewater Virginia. 1763-1776.

SUPPLEE, W. C., *M. S.*

The Potency of Vitamins "A" and "B" in a Commercial Food Product.

WALKER, E. A., *M. S.*

The Effectiveness of Alcoholic Mercuric Chloride Treatment for Tobacco Seed.

WHALEY, M. S., *M. S.*

The Botany and Culture of Bent Grasses.

WHEATON, I. E., *M. S.*

The Effect of Refrigeration Upon the Bacterial Content of Milk.

Class of 1928

DARKIS, F. R., *Ph.D.*

The Effect of Heat and Ultra-Violet Light on Unsaturated Compounds and the Theory of Electroisomerism.

HARPER, F. H., *Ph.D.*

Forecasting the Acreage, Yield and Price of Cotton.

HOUGHLAND, G. V. C., *Ph.D.*

The Relative Efficiency of Different Forms of Nitrogen and Potassium in Potato Production on the Eastern Shore of Maryland.

KRANTZ, J. C., *Ph.D.*

Emulsions and the Effect of Hydrogen Ion Concentration Upon Their Stability.

LEATHERMAN, M., *Ph.D.*

The Precise Determination of Cobalt As the Sulfide.

ROTHGEB, R. G., *Ph.D.*

A Statistical Study of Several Morphological Characters Associated with Reproduction and Yield in Maize.

WHITEHOUSE, W. E., *Ph.D.*

A Nutritional Study of the Strawberry.

CARTER, C. A., *M. A.*

A Preliminary Study of Chinese Education.

CONNER, M. H., *M. S.*

Bacterial Contamination of Tooth Brushes, with Special Reference to Hemolytic Streptococci.

EATON, N. A., *M. S.*

Insecticidal Values of Pyrethrum Extracts.

FARLEY, H. B., *M. S.*

A Study of Spinach Varieties, with Special Reference to Their Canning Qualities.

FISHBEIN, E., *M. S.*

A Quantitative and Qualitative Analysis of Bacteria Found in Floor Dust.

FOGG, G. W., *M. A.*

A Survey of the State Banks in Maryland.

FORSYTHE, G. M., *M. A.*

Sidney Lanier the Man.

LEGAULT, R. R., *M. S.*

The Potential Gradient of Some Organic Radicals.

McMURTREY, J. E., *M. S.*

Symptoms of Boron Deficiency on the Tobacco Plant.

MILLER, J. Z., *M. S.*

Ground Versus Unground Soybean Hay for Dairy Cows.

MOORE, W. H., *M. S.*

The Effect of Fertilizer on Yield and Quality of Tomatoes.

NOCK, A. E., *M. S.*

An Investigation of American Wormseed in Maryland.

PARSONS, A. C., *M. A.*

A Comparison of the First Three Books of the 1781 Edition of Smollett's Translation of *Gil Blas* with the 1747 Edition of the Original.

- PATTON, G. S., *M. A.*
The Effect of Objective Presentation on Learning and Retention.
- PELTIER, P. X., *M. S.*
The Potato Tuber Moth in Maryland.
- POELMA, L. J., *M. S.*
The Intravenous Tuberculin Test as a Means of Diagnosing Bovine Tuberculosis.
- POWELL, B. B., *M. S.*
The Marketing of Livestock in Maryland, with Particular Reference to the Baltimore Market.
- PRUSSACK, S., *M. S.*
Efficiency of the Various Methods of Sweeping from a Bacteriological Standpoint.
- ROSS, H., *M. S.*
An Economic Survey of the Black Raspberry Industry of Washington County.
- SHIPLEY, A. D., *M. A.*
A Study of the Range of Information of College Freshmen in 1925 and 1926 in Social Science at the University of Maryland.
- SMITH, R. C., *M. A.*
Some Economic Aspects of Radio Broadcasting, with Special Reference to the Financing of Broadcast Programs.
- STREETT, W. A., *M. A.*
An Economic Survey of Roads in Maryland.
- STUART, L. S., *M. S.*
The Effect of Growth Curves of *B. Typhosus* on the Phenol Coefficient.
- THORNTON, N. C., *M. S.*
The Value of a By-Product Potash Residue for Crop Growth, and Its Effect on the Constituents of Mixed Fertilizers.
- WELSH, M. F., *M. S.*
The Examination of 2,433 Human Sera by the Agglutination Test for Agglutinins of *Brucella Melitensis* Variety Abortus.
- WELTON, W. M., *M. S.*
The Determination of Small Amounts of Carbon Monoxide in Air and in Ethylene.
- WOLF, E. F., *M. S.*
The Deterioration of Insulating Oils.
- YODER, R. C., *M. S.*
The Effect of Size of Seed Upon Maturity and Yield of Canning Peas.
- Graduate fellows and graduate assistants are rendering very efficient service in several departments at a very moderate cost. The fellowship men, at \$500 per annum, are just as capable as full-time men to do a certain type of work in the operation of our laboratories.

They render valuable assistance in connection with the routine work of our field and laboratory research. They are used also as readers of students' note books and for routine work in connection with herd books, etc.

The graduate assistants, at \$1,000 per annum, render service in connection with the research of the Experiment Station and they also conduct freshman laboratory and quizz sections under the direction of a full-time instructor. The University obtains this efficient service at a low cost through the Graduate School because these young men and women are seeking higher degrees. The University is also assisting the superior students to train themselves to carry on in the field of higher education and research.

The fellowship item in the Graduate School budget fund should be increased from \$3,000 per annum to \$5,000 or \$7,000 per annum to meet the present demands.

Respectfully submitted,

C. O. APPLEMAN,
Dean.

COLLEGE OF HOME ECONOMICS

To the President of the University:

The organization of the College of Home Economics consists of three departments, namely: (1) Foods and Nutrition—This department offers courses in the planning, selection, preparation and nutritive value of food. (2) Textiles and Clothing—The courses given in this department include the study of textiles, their manufacture and identification and the designing, construction, selection and care of clothing. The head of this department also directs the few courses in Art that the College of Home Economics offers, due to the fact that no Art Work is given elsewhere in the University. Up to the present time only those Art courses absolutely necessary in a general Home Economics curriculum have been scheduled. (3) The Department of Home and Institutional Management—The work of this department consists of two parts—first, the course work in home management, including the practice housekeeping at the home management house and courses in institutional management which prepare students for tea room, cafeteria work, etc.; second, the management of the University Dining Hall and Laundry.

The College of Home Economics gives the subject matter courses for the Department of Home Economics Education which is organized within the College of Education. Students preparing to teach Home Economics are registered in this department.

Within the past two years some changes in courses offered in Home Economics have been made to meet the ever-changing needs. The enrollment has steadily increased during this time, although only a certain increase could be cared for due to the limited facilities. Graduates from the College of Home Economics are occupied in many useful ways. Approximately half are married and managing homes. A good number are teaching in Maryland. Some have entered the commercial field of Home Economics as dietitians, tea room managers, clothing specialists in department stores and a few are doing graduate work in preparation for college teaching or research work.

This college has attempted little in graduate work. There are at present two fellowship students who are doing part-time teaching and research work in Home Economics. These fellowships have been made possible by Purnell funds.

The University Dining Hall and Laundry furnish employment for a group of students who find it necessary to earn their way through

college. These two departments are operated entirely upon the money received for the services rendered by them. The new Dining Hall, which was a most welcome addition to the campus, was completed two years ago.

When the Chemistry Department recently moved to its new quarters it was decided to house the College of Home Economics in the old Chemistry building, which is now being thoroughly redecorated and renovated for that purpose. Enough additional space is available in this building to increase the capacity in the Foods and Textile Laboratory at least 50% without increasing the number of laboratory instructors. A lecture room accommodating 75 students and two fair-sized recitation rooms will be available in this building. A large lounging and restroom for women students with adequate lavatory facilities will also be located here.

It is hoped that the College of Home Economics will be settled in its new quarters before June, 1929.

M. MARIE MOUNT,
Dean.

DEAN OF WOMEN

To the President of the University:

The increased enrollment of women students in the University of Maryland made necessary the creation of a separate department, which would direct the social activities of the women students, supervise their housing needs—in short, organize their entire student life. Accordingly, the Department of Dean of Women was created in October, 1922.

The enrollment of women students since that time has been as follows:

| | |
|-----------|-----|
| 1922..... | 94 |
| 1923..... | 125 |
| 1924..... | 137 |
| 1925..... | 192 |
| 1926..... | 241 |
| 1927..... | 257 |
| 1928..... | 273 |

It is very difficult to define in exact terms the duties of the Dean of Women. A large part of them would certainly fall under the head of miscellaneous. For a great part they are rather intangible. However, they can be loosely classified under five heads: Administrative, advisory, academic, social and miscellaneous.

Under the administrative duties would fall: Serving on committees; attending faculty meetings; supervision of dormitories and off-campus houses; recommending students for scholarships and loan funds; conducting a business office; interviewing prospective students and their parents; making and enforcing house regulations, in co-operation with the Student Government, etc. As the above indicate, the administrative duties are rather elastic and are often stretched to include a large mass of detail.

Under academic duties come teaching and supervising scholarship. Scholarship records of all women students are kept on file in the Dean's office. The causes of conditions and failures are investigated. If a student is carrying too heavy a program, entering too many extra curricula activities, has had inadequate preparation for college or if she lacks capacity, an endeavor is made to make the proper adjustments.

The social duties include: Direction of social life on the campus; attend social functions; approve chaperones for dances; act as chaperone for dances; address meetings on the campus and in the community; institute and check up on the point system; represent the institution at educational conferences.

Under miscellaneous duties may be listed: Co-operating with and advising local Panhellenic and Woman's Student Government Association; answer questionnaires; write letters of recommendation for students; guard old traditions and help in forming new ones.

One of the primary aims of the department was to establish an effective student government among the women. The first year, 1922, was more or less an experiment, which proved successful. So, the following fall, a Constitution and By-laws were drawn up and put into effect. The scope of the work of this group has increased and expanded to include not only campus dormitories but off-campus houses and sorority houses. The Woman's Council has proved itself an effective and competent body in handling student conduct.

The Young Women's Christian Association was formed in the fall of 1923 and has continued to be a growing student organization and an influence among the women students.

The Junior Class of 1923 were the pioneers of May Day, which was given by them to the Seniors, and has continued as a class tradition.

The Woman's Senior Honor Society was founded in the spring of 1925. Members of the Junior Class were elected to this society prior to commencement by the outgoing senior members. This society stands for womanhood, scholarship and citizenship. Even in its first year its worthy purposes and high ideals made a definite impression on the campus and it is now recognized as the highest honor for women.

The outstanding need in this department is a new dormitory for the women of the University. Out of the entire enrollment of women, which is 273, we can accommodate only 52 students on the campus. The dormitories which are in existence consist of the old house formerly occupied by the President, which will take care of 20 girls; the Home Economics Practice House, which houses 15, and an old temporary frame building, known as the Y Hut, which houses 17 students. The latter building is extremely undesirable because of its temporary structure and the danger of fire. Many Maryland girls who desire to come to the University of Maryland are prevented from attending on account of the lack of dormitory space. In the fall of 1929 we shall undoubtedly have 350 students. Since we can take care of only 52 girls on the campus and with at least 100 Maryland girls on the campus and with at least 100 Maryland girls not coming, because of unsatisfactory living conditions, ample provision should certainly be made for 300 girls to meet this immediate need.

Respectfully submitted,

ADELE H. STAMP,
Dean of Women.

Physical Education for Women

To the President of the University:

The Department of Physical Education for Women was organized in October, 1922, in response to the demand created by the continued increase in the enrollment of women students in the University.

The first thing to be instituted was a complete physical examination for every girl, once a year, by a competent woman physician. The parents are notified immediately of any physical defect which needs correction. The type of exercise indicated by the physician is given to the individual girl.

From the beginning all extra-mural sports, with the exception of rifle matches, which are telegraphic, have been frowned upon. Our aim has been to organize and promote an intra-mural program. From the outset, sports, games and an informal program of physical education activities have been emphasized.

The first team to be organized was the rifle team, which was formed in October, 1922. This sport is very popular and the team itself has been very successful, coming out third in the national championship once, winning second place twice and first place once. Since its beginning the team has won the majority of its contests, shooting in competition with the leading institutions of the country.

The second sport started was that of basketball, which was begun with the completion of the new gymnasium in the fall of 1923. Our program consists of interclass and interhouse games. In 1924 a silver loving cup was offered by the Department of Athletics to the class team winning the interclass series. This cup is competed for every year and is much sought after.

In 1924 tennis was started as an organized sport. We have two tournaments yearly, one in the spring and one in the fall.

In 1927 bowling was started and has proved a very popular sport. We have a bowling tournament in the winter between the various houses. Our fall program consists of tennis, bowling and outdoor basketball. Basketball is the principal sport during the winter, while in the spring we have tennis, track and swimming. The Y. W. C. A. pool in Washington is used for swimming. Rifle continues throughout the school year.

The Woman's Athletic Association was organized in the fall of 1924, with the object of promoting athletic interest and sportsman-

ship among all the women on the campus. Although still in its infancy, this organization is very successful.

For Freshmen and Sophomores, a course in Hygiene is given by the Head of the Department. This course is required of all Freshmen and Sophomore girls. It consists of three hours of work a week for freshmen and three hours a week for sophomores. One hour is lecture and two are laboratory periods. This year a part-time instructor in Physical Education was added to handle the laboratory or gymnasium part of the Hygiene course.

There are two chief needs in this department: First, the services of a competent woman physician one day a week. She will be available for medical advice, guidance and consultation along health lines for the girls as well as giving the medical examination. The second need is that of a full-time instructor in Physical Education for Women. With the present person in charge of this work, serving in the dual capacity of Dean of Women and Director of Physical Education, it is impossible to give ample time to the work. As the University continues to grow it will be necessary to provide further equipment, including possibly a swimming pool, and a more extensive course which will provide for the training of playground instructors, physical education directors and such.

Respectfully submitted,

ADELE H. STAMP,
Instructor, Physical Education for Women.

Dental School

To the President of the University:

Leaders of dental education in the United States have urged that secondary school training does not sufficiently equip the average student to undertake and succeed in any course of professional training. After carefully considering the necessity for increased pre-dental educational requirements, the Dental Educational Council of America adopted one year collegiate training in addition to graduation from high school as a minimum requirement for admission to the study of dentistry. Because of this and beginning with the regular session 1926-27, the School of Dentistry included in its schedule an additional year in arts and science subjects to precede instruction in dental science. During the period of time the increased requirement has been in operation in the School of Dentistry the truth of the assumption that increased pre-professional training greatly increases the possibility for a better equipped professional man has been convincingly demonstrated. While the arrangement for administering the requirement of the additional work in the University of Maryland is not identical with that in other dental schools, the increase in time is in accord with the rapid advances that have been made in the past few years in dental educational requirements as set forth in announcements by the Dental Educational Council of America. As at present organized, the five-year schedule contains accredited academic work to the extent of forty-eight collegiate credits. By a slight change in limiting the dental science subjects, it is possible to add sufficient arts and science work to bring these credits to a total of sixty semester hours, or two full years of academic credit, and by so doing place the School of Dentistry in a position to offer the B. S. degree to dental students at the end of the fourth year, as is now done in many of the better dental schools in the United States.

During the past two years the enrollment has declined, due, of course, to the unfavorable reaction to more stringent entrance requirements. As we proceed further in the period of readjustment, however, a steadily increasing enrollment is observed. It is confidently believed that in the next two or three years the enrollment will regain its normal strength. The Faculty Council of the School of Dentistry has fixed a definite limit on enrollment for future classes. This has been done because attempted instruction to large groups in classroom, in clinics and in laboratory teachings has demonstrated that favorable progress is jeopardized when teaching groups are com-

posed of large numbers. Further, since the School of Dentistry as a State institution should aim to serve the needs of the State, its enrollment must be limited to the physical facilities which will meet the need. Instruction has been offered in the past two years under adverse conditions; classrooms, technic laboratories, clinic facilities, have all been too limited for best results in teaching all of this in spite of the fact that some of the classes show small enrollments. The new Dental and Pharmacy Building, now being erected, and which will be occupied about October 1, 1929, will remove the many objectionable features of a too limited physical arrangement, and, with classes limited to numbers for which classrooms and laboratories are designed to accommodate, much better results are looked for.

One of the outstanding features of the past two years has been the development of a splendid dental library, with a full-time librarian in charge. The library now meets in a practical way the average need of the student and the instructor in his reference work in class. It is not adequate for reference in research problems, to which task the librarian is now devoting much of her time. There is available at the present time about twenty-five hundred bound volumes in the dental library, an increase of almost 1000% in the past two years. This great progress has resulted from the very active interest taken by the teaching body and the support of the Clarence J. Grieves Library Foundation Committee, which represents the Maryland State Dental Association, and which administers a library endowment fund of that body of approximately \$6,000.

The personnel of the teaching staff has remained practically intact through the past two years. The members of the staff have been intensely interested in their work and have made every effort to improve their teaching service through special work in the field in which the individual instructor is engaged. This has resulted in a more experienced and seasoned group of teachers and in a more flattering progress on the part of the student. At the present time little definite work is being done by the School of Dentistry in the field of research. The ground work is being laid for certain research along lines of immediate interest to the profession. While this preparatory work is merely in a formative state, it is hoped that in the near future it will bear fruits of value to the School of Dentistry as well as the profession.

Respectfully submitted,

J. BEN ROBINSON,
Dean.

UNIVERSITY HOSPITAL—UNIVERSITY OF MARYLAND

1926-27—1927-28

HOSPITAL ADMISSIONS

| | 1927-28 | Total—Two Years |
|------------------------------|---------|-----------------|
| Private and Semi-Private | 1,266 | 2,689 |
| Part Pay | 1,702 | 3,689 |
| Free—City | 950 | 1,896 |
| Free—State | 1,104 | 2,306 |
| Total Admissions to Hospital | 5,022 | 10,579 |

HOSPITAL DAYS

| | | |
|---|---------|---------|
| Private Patient Days | 17,004 | 35,449 |
| Part Pay Patient Days | 23,952 | 52,562 |
| Free—City Patient Days | 17,330 | 36,245 |
| Free—State Patient Days | 18,017 | 36,843 |
| Total Patient Days in Hospital | 76,303 | 161,099 |
| Cost Per Person Per Day, Operating Expense Only | 1926-27 | 1927-28 |
| Cost Per Patient Day, including Capital Outlay | \$4.43 | \$4.78 |
| Allowance Per Day, City Free Patients | 4.51 | 4.83 |
| Allowance Per Day, State Free Patients | 1.55 | 1.55 |
| Estimated Cost Per Day, Ward Patients | 1.23 | 1.48 |
| | 4.00 | 4.00 |

GENERAL DISPENSARY

(Includes All Clinics Except State V. D. Clinic and Accident Room.)

| | 1926-27 | 1927-28 | Total—Two Years |
|--------------------------------|---------|---------|-----------------|
| Old Patients | 62,865 | 64,182 | 127,047 |
| New Patients | 19,086 | 19,345 | 38,431 |
| Total | 81,951 | 83,527 | 165,478 |
| STATE VENEREAL DISEASE CLINIC* | | | |
| Male Patients | 15,613 | 2,506 | 18,119 |
| Female Patients | 5,098 | 906 | 6,004 |
| Total | 20,711 | 3,412 | 24,123 |
| ACCIDENT DEPARTMENT | | | |
| Redressings | 8,849 | 10,035 | 18,884 |
| New Patients | 5,511 | 7,311 | 12,822 |
| Total | 14,360 | 17,346 | 21,706 |

UNIVERSITY HOSPITAL—UNIVERSITY OF MARYLAND—Continued.

Total—Two Years

1927-28

1926-27

DEATHS

Institutional
Within 24 Hours of Admission
Infants

227
90
31

219
95
52

446
185
83

Total

348

366

714

*State Venereal Disease Clinic moved to own quarters November, 1927.

MATERNITY

Patients Admitted—Mothers
Babies Born
Babies Stillborn
Babies Premature
Babies Died
Maternal Deaths.....

1926-27
460
415
40
46
31
11

1927-28
347
293
33
21
19
15

Total—Two Years
807
708
73
67
50
26

OUT-PATIENT OBSTETRICS

Patients Registered in Dispensary
Patient Visits to Dispensary
White Patients Delivered in Homes.....
Colored Patients Delivered in Homes.....
Total Deliveries
Home Visits to Patients.....

1,624
6,857
183
839
1,072
23,584

1,760
7,655
112
1,033
1,145
22,909

3,324
14,512
295
1,922
2,217
46,493

OPERATING ROOM

Major Operations
Minor Operations
Eye, Ear, Nose and Throat Operations.....
Caesarian Sections
Fractures Reduced and Casts Applied.....

1,450
669
630
39
349

1,723
502
499
33
255

3,173
1,171
1,189
72
604

Total

3,197

3,012

6,209

Anaesthetics, General
Anaesthetics, Local and Caudal

2,492
432

4,800
864

Total

2,924

2,740

5,664

Surgical Dressings
Examinations

1,045
826

1,770
1,660

Total Number of Patients.....

5,068

4,571

9,639

UNIVERSITY HOSPITAL—UNIVERSITY OF MARYLAND—Continued.

CASH RECEIVED

| | 1926-27 | | 1927-28 | | Total—Two Years |
|---------------------------------------|--------------|--|--------------|--|-----------------|
| | \$ | | \$ | | |
| Patients— | | | | | |
| State of Maryland..... | 47,500.00 | | 52,500.00 | | \$100,000.00 |
| Private Room Patients..... | 97,541.50 | | 89,593.63 | | 187,135.13 |
| Ward Patients..... | 105,900.68 | | 96,696.30 | | 202,596.98 |
| Operating Room Fees..... | 22,303.50 | | 20,152.50 | | 42,456.00 |
| Laboratory..... | 9,604.58 | | 9,436.92 | | 19,041.50 |
| X-Ray Diagnostic..... | 30,742.50 | | 31,074.72 | | 61,817.22 |
| X-Ray Therapeutic..... | 870.50 | | 227.50 | | 1,098.00 |
| Nurses' Board..... | 14,128.31 | | 12,489.50 | | 26,617.81 |
| Dispensary..... | 5,960.44 | | 4,469.68 | | 10,430.12 |
| Accident Room..... | 9,742.04 | | 10,072.33 | | 19,814.37 |
| Drugs and Medicines..... | 7,597.25 | | 8,527.63 | | 16,124.88 |
| Medical and Surgical Supplies..... | 1,683.52 | | 2,600.49 | | 4,284.01 |
| Laundry..... | 49.91 | | 219.04 | | 268.95 |
| Anaesthetics..... | 5,522.25 | | 4,938.50 | | 10,460.75 |
| Cystoscopy..... | 1,062.00 | | 629.97 | | 1,691.97 |
| Physiotherapy..... | 470.78 | | 721.27 | | 1,192.05 |
| Electrocardiograms..... | 477.00 | | 425.00 | | 902.00 |
| Total..... | \$361,156.76 | | \$347,774.98 | | \$705,931.74 |
| <i>Miscellaneous—</i> | | | | | |
| Telephone and Telegraph..... | 772.77 | | 844.55 | | 1,617.32 |
| Cots and Meals..... | 1,686.64 | | 1,498.00 | | 3,184.64 |
| Commissions and Discounts Earned..... | 3,223.29 | | 2,945.03 | | 6,168.32 |
| Electric Fans..... | 6.50 | | 1.00 | | 7.50 |
| Sundry Receipts..... | 3,900.35 | | 5,587.05 | | 9,487.40 |
| Rent..... | 1,200.00 | | 200.00 | | 1,400.00 |
| Total..... | \$10,789.55 | | \$11,075.63 | | \$21,865.18 |
| Donations..... | 5,201.44 | | 3,763.29 | | 8,964.73 |
| <i>Transfers of Funds—</i> | | | | | |
| From U. H. Fire Protection Fund..... | 881.45 | | | | 881.45 |
| From U. H. Improvement Fund..... | | | 10,676.95 | | 10,676.95 |
| From Mental Hygiene Clinic..... | | | 839.19 | | 839.19 |
| Total..... | \$881.45 | | \$11,516.14 | | \$12,397.59 |
| Total Cash Received..... | \$378,029.20 | | \$371,130.04 | | \$749,159.24 |

UNIVERSITY HOSPITAL—UNIVERSITY OF MARYLAND—Continued.

CASH DISBURSED

Subsistence—

| | 1926-27 | 1927-28 | Total—Two Years |
|--------------------------|-------------|-------------|-----------------|
| Poultry, Meat and Fish | \$20,247.61 | \$20,763.78 | \$41,011.39 |
| Butter and Eggs | 10,364.28 | 9,073.41 | 19,437.69 |
| Milk and Cream | 15,357.94 | 14,575.37 | 29,933.31 |
| Fruits and Vegetables | 10,405.90 | 9,770.85 | 20,176.75 |
| Groceries and Provisions | 18,587.75 | 18,080.81 | 36,668.56 |
| Total | \$74,963.48 | \$72,264.22 | \$147,227.70 |

Housing—

| | | | |
|-----------------------|-------------|-------------|-------------|
| Household Supplies | \$6,338.06 | \$6,249.62 | \$12,587.68 |
| Laundry Supplies | 2,336.90 | 1,397.74 | 3,734.64 |
| Fuel | 12,477.84 | 12,775.35 | 25,253.19 |
| Dry Goods and Notions | 6,571.42 | 5,436.02 | 12,007.44 |
| Gas and Electricity | 5,399.21 | 5,467.83 | 10,867.04 |
| Water Rent | 488.69 | 990.47 | 1,479.16 |
| Total | \$33,612.12 | \$32,317.03 | \$65,929.15 |

56 *Medical Care and Attention—*

| | | | |
|-------------------------------|-------------|-------------|-------------|
| Drugs and Medicines | \$7,196.06 | \$6,259.43 | \$13,455.49 |
| Medical and Surgical Supplies | 24,020.04 | 24,802.35 | 48,822.39 |
| Laboratory Supplies | 2,201.95 | 1,754.63 | 3,956.58 |
| Printing | 2,202.26 | 1,854.08 | 4,056.34 |
| Teaching and Training Nurses | 2,605.95 | 3,357.07 | 5,963.02 |
| Nurses' Home Expense | 7,315.38 | 5,526.84 | 12,842.22 |
| X-Ray Diagnostic | 4,008.90 | 3,554.97 | 7,563.87 |
| X-Ray Therapeutic | 112.59 | | 112.59 |
| Total | \$49,663.13 | \$47,109.37 | \$96,772.50 |

Maintenance of Property—

| | | | |
|---------------------------|-------------|-------------|-------------|
| Materials and Repairs | \$12,379.09 | \$13,337.34 | \$25,716.43 |
| Repairs to Instruments | 1,252.60 | 927.46 | 2,180.06 |
| Renewals and Replacements | 16,280.66 | 9,575.83 | 25,856.49 |
| Total | \$29,912.35 | \$23,840.63 | \$53,752.98 |

Pay Roll—

| | | | |
|--------------------|--------------|--------------|--------------|
| Salaries and Wages | \$172,645.68 | \$175,921.26 | \$348,566.94 |
|--------------------|--------------|--------------|--------------|

UNIVERSITY HOSPITAL—UNIVERSITY OF MARYLAND—Continued.

CASH DISBURSED—Continued.

Administration—

| | |
|----------------------------------|------------|
| Telephone and Telegraph..... | \$3,427.45 |
| Office Supplies and Expense..... | 841.55 |
| Postage..... | 672.99 |
| Insurance..... | 168.28 |

Total.....\$5,110.27

Miscellaneous—

| | |
|--|-----------|
| Special Payments..... | \$ 541.15 |
| Collections and Legal Fees..... | 57.59 |
| Freight and Hauling..... | 1,103.17 |
| Cartfares..... | 394.32 |
| Rent (Dwellings)..... | 1,800.00 |
| Group Insurance..... | 311.86 |
| Sundries..... | 3,113.09 |
| Refunds and Discounts to Patients..... | 2,458.68 |

Total.....\$9,779.86

Betterments—

| | |
|--------------------------------|------------|
| Improvements to Buildings..... | \$2,437.64 |
| New Equipment..... | 3,961.40 |

Total.....\$6,399.04

Total Cash Disbursed.....\$382,085.93

SUMMARY

| | |
|--------------------------------------|-------------|
| Accounts Payable October 1st..... | \$ 4,681.94 |
| Cash on Hand October 1st..... | 8,324.98 |
| Total Cash Received..... | 378,029.20 |
| Total Cash Disbursed..... | 382,085.93 |
| Receipts Over Disbursements..... | 4,056.73 |
| Disbursements Over Receipts..... | 4,268.25 |
| Cash on Hand September 30th..... | |
| Accounts Payable September 30th..... | |

Total—Two Years
\$6,456.63
1,684.97
1,457.81
642.19

\$10,241.60

Total—Two Years
\$ 541.15
141.54
2,591.66
1,186.06
2,550.00
785.77
5,638.61
4,890.14

\$18,324.93

\$3,751.64
6,074.06

\$9,825.70
\$750,641.50

\$8,324.98
749,159.24
750,641.50
1,482.26
6,842.72

UNIVERSITY HOSPITAL—UNIVERSITY OF MARYLAND—Continued.

INCOME

| Appropriations— | | 1926-27 | 1927-28 | Total—Two Years |
|--------------------------------------|--------------|--------------|---------------|-----------------|
| State of Maryland General Funds..... | | \$47,500.00 | *\$111,300.00 | \$158,800.00 |
| <i>Patients—</i> | | | | |
| Accident Room | \$10,742.47 | \$10,153.70 | \$20,896.17 | |
| Anaesthetics | 5,923.00 | 5,175.00 | 11,098.00 | |
| Cots and Meals | 1,603.05 | 1,404.75 | 3,007.80 | |
| Cystoscopy | 1,165.00 | 675.00 | 1,840.00 | |
| Dispensary | 5,896.75 | 4,468.36 | 10,365.11 | |
| Drugs and Medicines | 8,177.68 | 8,925.87 | 17,103.55 | |
| Electric Fans | 3.50 | ..... | 3.50 | |
| Electrocardiogram | 452.00 | 435.00 | 887.00 | |
| Laboratory Fees | 10,431.90 | 9,841.70 | 20,273.60 | |
| Laundry | 49.33 | 258.14 | 307.47 | |
| Medical and Surgical Supplies | 2,048.90 | 2,332.86 | 4,381.76 | |
| Nurses' Board | 14,374.00 | 11,553.25 | 25,927.25 | |
| Operating Room | 23,724.20 | 20,551.95 | 44,276.15 | |
| Physiotherapy | 536.28 | 744.27 | 1,280.55 | |
| Private Rooms | 98,450.00 | 87,433.25 | 185,883.25 | |
| Wards | 114,480.37 | 99,040.47 | 213,520.84 | |
| X-Ray Diagnostic | 33,379.55 | 31,200.05 | 64,579.60 | |
| X-Ray Therapeutic | 1,050.50 | 232.50 | 1,283.00 | |
| Total | \$332,488.48 | \$294,426.12 | \$626,914.60 | |

*Includes Special Appropriation of \$58,800.00 to cover overdraft in State Treasurer's Office due on account of accumulated deficits from 1920.

UNIVERSITY HOSPITAL—UNIVERSITY OF MARYLAND—Continued.

INCOME—Continued.

General—

| | 1926-27 | 1927-28 | Total—Two Years |
|--|-------------|------------|-----------------|
| Commissions | \$ 875.31 | \$ 802.56 | \$1,677.87 |
| Discounts Earned | 2,345.37 | 2,061.95 | 4,407.32 |
| Donations | 5,191.44 | 3,663.29 | 8,854.73 |
| Sale of Dry Goods and Notions | 388.89 | 861.57 | 1,250.46 |
| Sale of Groceries and Provisions | 920.21 | 645.35 | 1,565.56 |
| Sale of Household Supplies | 76.54 | 195.56 | 272.10 |
| Sale of Boxes, Barrels, Bones, etc. | 223.97 | 304.32 | 528.29 |
| Sale of Stationery | 37.18 | 48.91 | 86.09 |
| Rent | 1,200.00 | 200.00 | 1,400.00 |
| Interest on Deposits | 794.40 | 946.19 | 1,740.59 |
| Maintenance of Property | 929.58 | ..... | 929.58 |
| Total | \$12,982.89 | \$9,729.70 | \$22,712.59 |

Miscellaneous—

| | | | |
|------------------------------|--------------|--------------|--------------|
| Group Insurance | \$ 236.11 | \$ 218.28 | \$ 454.39 |
| Pay Roll Refunds | 588.66 | 567.02 | 1,155.68 |
| Telephone and Telegram | 807.50 | 869.10 | 1,676.60 |
| Sundries | 812.53 | 1,521.28 | 2,333.81 |
| Total | \$2,444.80 | \$3,175.68 | \$5,620.48 |
| Transfer of Funds ..... | ..... | 10,676.95 | 10,676.95 |
| Total Income | \$395,416.17 | \$429,308.45 | \$824,724.62 |

UNIVERSITY HOSPITAL—UNIVERSITY OF MARYLAND—Continued.

EXPENSES

Feeding—

| | 1926-27 | 1927-28 | Total—Two Years |
|-------------------------------|-------------|-------------|-----------------|
| Poultry, Meat and Fish..... | \$20,709.89 | \$20,763.78 | \$41,473.67 |
| Butter and Eggs..... | 9,931.13 | 9,073.41 | 19,004.54 |
| Milk and Cream..... | 15,197.81 | 14,575.37 | 29,773.18 |
| Fruits and Vegetables..... | 10,143.95 | 9,770.85 | 19,914.80 |
| Groceries and Provisions..... | 18,136.27 | 16,899.21 | 35,035.48 |

Total

| | | | |
|--|-------------|-------------|--------------|
| | \$74,119.05 | \$71,082.62 | \$145,201.67 |
|--|-------------|-------------|--------------|

Housing—

| | | | |
|--------------------------------------|------------|------------|------------|
| Storeroom Expense..... | \$1,644.39 | \$1,440.66 | \$3,085.05 |
| Laundry Supplies and Expense..... | 11,026.19 | 9,532.20 | 20,558.39 |
| Fuel..... | 11,982.29 | 12,775.35 | 24,757.64 |
| Dry Goods and Notions..... | 5,922.62 | 6,297.22 | 12,219.84 |
| Engine Room Expense..... | 15,187.93 | 14,753.47 | 29,941.40 |
| Gas and Electricity..... | 4,867.13 | 5,467.83 | 10,334.96 |
| Water Rent..... | 488.69 | 990.47 | 1,479.16 |
| Household Supplies and Expenses..... | 17,754.48 | 17,655.51 | 35,409.99 |
| Kitchen Expense..... | 12,072.54 | 12,431.57 | 24,504.11 |

Total

| | | | |
|--|-------------|-------------|--------------|
| | \$80,946.26 | \$81,344.28 | \$162,290.54 |
|--|-------------|-------------|--------------|

Medical Care and Attention—

| | | | |
|--------------------------------------|------------|------------|-------------|
| Drugs and Medicine..... | \$6,923.22 | \$6,119.90 | \$13,043.12 |
| Medical and Surgical Supplies..... | 24,404.07 | 24,421.51 | 48,825.58 |
| Laboratory Supplies and Expense..... | 11,691.09 | 8,874.09 | 20,565.18 |
| Teaching and Training Nurses..... | 2,605.95 | 3,357.07 | 5,963.02 |
| Nurses' Homes..... | 11,962.17 | 11,272.55 | 23,234.72 |
| Dispensary..... | 9,024.09 | 9,186.56 | 18,210.65 |
| X-Ray Diagnostic..... | 13,190.23 | 12,228.91 | 25,419.14 |
| X-Ray Therapeutic..... | 112.59 | 849.06 | 961.65 |
| Nursing Staff..... | 52,790.97 | 54,884.87 | 107,675.84 |
| Accident Room..... | 1,062.50 | 1,080.00 | 2,142.50 |
| Anaesthetist..... | 1,502.50 | 1,800.00 | 3,302.50 |
| Linen Room..... | 1,847.48 | 1,802.85 | 3,650.33 |

Total

| | | | |
|--|--------------|--------------|--------------|
| | \$137,116.86 | \$135,877.37 | \$272,994.23 |
|--|--------------|--------------|--------------|

UNIVERSITY HOSPITAL—UNIVERSITY OF MARYLAND—Continued.

EXPENSES—Continued.

Administration—

| | 1926-27 | 1927-28 | Total—Two Years |
|-------------------------------------|-------------|-------------|-----------------|
| Salaries and Wages..... | \$26,882.85 | \$29,852.28 | \$56,735.13 |
| Car Fares..... | 388.52 | 840.24 | 1,228.76 |
| Collections and Legal Fees..... | 57.59 | 83.94 | 141.53 |
| Discounts and Refunds..... | 2,451.18 | 2,431.46 | 4,882.64 |
| Stationery and Office Supplies..... | 841.00 | 843.42 | 1,684.42 |
| Bad Debts—Losses..... | 8,749.41 | 9,498.02 | 18,247.43 |
| Printing..... | 2,011.72 | 1,854.08 | 3,865.80 |
| Telephone and Telegraph..... | 3,427.45 | 3,029.18 | 6,456.63 |
| Postage..... | 642.13 | 886.26 | 1,528.39 |
| Special Payments..... | 541.15 | ..... | 541.15 |
| Freight, Express and Hauling..... | 1,101.44 | 1,439.99 | 2,541.43 |
| Insurance..... | 42.58 | ..... | 42.58 |
| Rent..... | 1,800.00 | 750.00 | 2,550.00 |
| Total..... | \$48,937.02 | \$51,508.87 | \$100,445.89 |

Maintenance of Property—

| | | | |
|-----------------------------|-------------|-------------|-------------|
| Repairs and Renewals..... | \$15,930.66 | \$9,575.83 | \$25,506.49 |
| Repairs to Instruments..... | 1,252.60 | 927.46 | 2,180.06 |
| Repairs to Property..... | 18,191.94 | 20,150.89 | 38,342.83 |
| Total..... | \$35,375.20 | \$30,654.18 | \$66,029.38 |

Miscellaneous—

| | | | |
|----------------------|--------------|--------------|--------------|
| Group Insurance..... | \$ 473.11 | \$ 473.91 | \$ 947.02 |
| Sundries..... | 3,064.75 | 2,994.56 | 6,059.31 |
| Total..... | \$3,537.86 | \$3,468.47 | \$7,006.33 |
| Total Expenses..... | \$380,032.25 | \$373,935.79 | \$753,968.04 |

The Law School

To the President of the University:

The last biennial report of the School of Law outlined the plans adopted by the Faculty to secure for the school a "Class A" rating. We are pleased to report that much progress has been made, and we feel that the school will soon attain the position it seeks.

The American Bar Association has recommended, and the Association of American Law Schools requires, that a minimum of two years of college work be required for entrance. This requirement became effective in our school with the opening of the scholastic year 1927-28. With the exception allowed in a limited number of cases for special students, who, while not having the full academic work required, are, in the opinion of the Faculty Council, fitted by reason of their maturity and experience in other lines of work for the study of law, the entering classes for the past two years have met the requirements. The raising of the requirements has resulted, of course, in a material reduction in the number of students, and, for the first time in many years, the school is faced with the problem of maintenance. It is believed, however, that when the transition period through which we are now passing is over, the Law School will again be self-supporting.

The physical needs of the school, enumerated in the last report, have not been met. It is hoped, however, that the present Legislature will accede to the Governor's recommendation of an appropriation for a new Law School building, which will enable us to have proper classrooms, offices and the Library adequately taken care of under one roof. The Faculty has given particular attention to a revision of the curriculum offered. Several new courses have been added, which we believe will help to equip the student more thoroughly for the practice of Law.

Two additional full-time professors have been added to the Faculty since the last report, and it is planned to increase the full-time Faculty by additional increases during the present biennium. Important additions have been made to the Library, and the increasing use of the Library by the students attests its value to them.

No changes in the organization of the school have been made since the last report. The Day Division of the school, covering a course of

three years, graduated its first class last June. The Evening Division, covering a course of four years, will graduate its first class at the close of the present scholastic year, completing the reorganization of the courses begun four years ago.

Respectfully submitted,

HENRY D. HARLAN,
Dean.

School of Medicine

To the President of the University:

The Medical Department of the University of Maryland has conducted the usual medical courses for students. There have been in attendance 405 students, 146 of these from the State of Maryland. The Medical School furnishes heads of departments and visiting physicians for the University Hospital and assists in the conduct of the medical work at Mercy Hospital and Dispensary and also of the Baltimore City Hospitals at Bay View. At both the University and Mercy Hospitals a general outdoor clinic is carried on, in which about 100,000 visits are made by those seeking aid. In addition, at the University Hospital an obstetrical clinic is maintained, under the auspices of which more than 1,000 women are delivered in their homes by medical students and graduate nurses, under the supervision of visiting and resident physicians of the University Hospital.

The Medical School has for several years systematically developed a program of medical extension work which is aimed to give the practicing physicians, both in Baltimore and in the counties, an opportunity of keeping abreast with recent developments in medical science. At present the program includes the following activities:

I. Thursday afternoon clinics through the Winter season given at the University by men of prominence in the fields of medicine, surgery and specialties, from Baltimore and from other cities of the country. These clinics are largely attended by physicians of Baltimore and neighboring counties.

II. The June Review Course: An intensive three weeks' course given at the school for physicians of the State. Lectures, ward rounds, clinics, dispensary work and laboratory work are included in the curriculum.

III. Post-graduate teaching in the medical dispensary group. Physicians are enrolled in the Medical Out Patient Departments as graduate students for a period of two years. They attend for a two and one-half hour period three times a week. The last hour of each period is given to formal instruction by clinics, lectures and ward rounds.

IV. Extra-mural Review Courses: During the Summer months the Medical School offers a number of short review courses to be given in any city or large town of the State where a group of physicians

is organized for the purpose of taking such a course. These courses cover topics such as diseases of the heart, lung, infant feeding, etc. Courses were given this last Summer in Hagerstown, Frederick and Westminster.

Respectfully submitted,

J. M. H. ROWLAND, M.D.,
Dean.

School of Pharmacy

To the President of the University:

The biennium ending September 30, 1928, has been an unusually busy two years for the School of Pharmacy. During this period all of the work of the minimum three-year course was given for the first time, foundations were laid for the beginning of graduate courses, the development of a pharmaceutical library was begun and plans were made for the new classroom and laboratory building and its equipment. These and other new undertakings were successfully carried out in the face of an ever-increasing enrollment of students and inadequate facilities for handling the work.

In 1925-26 the total number of students in attendance was 234, in 1926-27 the enrollment was 277 and in 1927-28 it increased to 358. This represents an increase of 53 per cent in the two-year period. Twenty-eight of the total enrollment for 1926-27 were non-resident students and for 1927-28 33 were non-residents.

To meet the instructional demands created by this increase in attendance, the members of the instructional staff were required to do additional work. This they did cheerfully, although some of them were already doing the maximum amount of teaching permitted by the Association of American Universities. This condition could not be remedied at the time because of the lack of funds, but it was partially corrected at the beginning of this session and it is expected that it will be further improved during the next biennium.

Insofar as space and working facilities are concerned, there has been no change since the last report was submitted. Nevertheless, it is felt that progress has been made. We have been able, by exercising our ingenuity to the utmost, to carry on the regular work and to give some graduate courses. At the end of the biennium four students had completed the work for the Bachelor's degree and several of them had begun work leading to the Master's degree. With the facilities which the new building will offer, it is expected to expand this work considerably in order to meet the demand for specially trained men made by the pharmaceutical manufacturers and to prepare a limited number of students to fill teaching positions in our schools of pharmacy.

A good library is essential for effective undergraduate teaching and is a necessity for instruction in graduate courses. During the biennium approximately 600 volumes were added to our library and more

will be added in the near future. Not only have we budgeted a reasonable amount to be expended for this purpose over the next two years, but our Alumni Association has undertaken to raise a fund of \$2,500 to assist us in building up this service. What we are in greatest need of in this connection at the present time is an adequate staff of properly trained persons to accession the books, catalogue them and see that they are properly taken care of.

At present we are marking time. The close of the last biennium marked the extreme limit of expansion possible in the quarters now occupied, and not until we move into the new building, which it is expected will be before the beginning of the next session, may further expansion be looked for. Attention will then be focused on perfecting the instruction now given with the view to increasing its effectiveness and to developing the new courses needed to keep pace with the rapidly advancing standards in pharmaceutical education.

In this connection, your attention is called to the fact that in 1925 the standard minimum course in pharmacy was advanced from one of two years to one of three years. In August of last year the American Association of Colleges of Pharmacy, which is our present standardizing agency, voted to raise the standard to a minimum of four years of college work, beginning with the session of 1932. As the Maryland College of Pharmacy is a charter member of this association, it must be prepared to carry into effect the new requirements when the proper time comes. By so doing, it will not only be meeting its obligation to the national body, but it will also be complying with the wishes of the pharmacists of the State as expressed by the Maryland Pharmaceutical Association, which organization went on record as favoring this movement at the annual meeting held in June of last year.

When these new requirements become effective we will still be able to accommodate the present enrollment in the space which the new building will provide, but some additional equipment will be necessary and the instructional staff will have to be added to. The latter is already giving us some concern, as has been pointed out, and the situation will become increasingly difficult to meet unless our income is augmented. While the accommodations in the new building will be adequate to take care of the present enrollment, under the increased requirements they will not serve larger numbers, and as the fees charged our students are already higher than those charged by a majority of the schools of pharmacy, an increase in revenue from this source would appear to be impracticable. Furthermore, the possibility of receiving additional generous endowments, like that of Captain Isaac E. Emerson, for the maintenance of the chair of physiological drug testing, seems to be remote. It would, therefore, appear that the only way in which this condition can be remedied is by an

increase in the State's appropriation for maintenance. If present conditions with respect to standards and salaries prevail, it is estimated that it would require an appropriation of \$25,000 annually to make possible the maintenance of an adequate staff of teachers. As the State already appropriates \$10,000 annually for maintenance, this would represent an increase of \$15,000. Inasmuch as the State recognizes pharmacy as one of the essential agencies for safeguarding and maintaining the health of the inhabitants, and as the drug industries of the State pay taxes on an assessed valuation of over \$40,000,000, it would seem that an appropriation of this size might reasonably be expected.

If this increase of \$15,000 in the State's appropriation for maintenance is made available for the biennium beginning with 1932 and the \$10,000 requested for furnishing and equipping the new building is appropriated by the present Legislature for immediate use, the School of Pharmacy will be in a position to meet to a reasonable extent all of the requirements of the standardizing agencies and to function in a creditable manner otherwise.

In conclusion it is desired to record our appreciation of the helpful co-operation of the Board of Pharmacy, the Maryland Pharmaceutical Association and the Alumni Association of the School of Pharmacy in promoting the interests of the School and to thank the Members of the Legislature and the Governor for the appropriation which has made possible the erection of the much-needed laboratory and classroom building.

Respectfully submitted,

A. G. DU MEZ,
Dean.

The State Department of Forestry

To the President of the University:

The Forestry Department, created by the Forest Laws of 1906, is charged with "the direction of all forest interests and all matters pertaining to forestry and the forest reserves within the jurisdiction of the State." The duties may be broadly classed under three heads: Administration, Technical Work, and Education.

ADMINISTRATION

Forest Protection—One of the chief functions of the Department is to provide a State-wide system of forest protection, supported by adequate forest laws. Under the favorable conditions of timber growing in Maryland, it is realized, that adequate forest protection is the necessary first step in increasing the productivity of our forest lands. A system of forest protection has been built up, as far as funds permitted, which is functioning in an efficient manner.

An Assistant Forester is in charge of the work, and the State is divided into three forest districts, each in charge of a technically trained District Forester. The headquarters of the districts are Cumberland, Upper Marlboro, and Salisbury. In each district is a detection system consisting of lookout towers, of which there are thirteen in the State. These towers are located at high points where a wide scope of territory is under observation. Each is manned by a lookout watchman during the fire season, who has telephone connection with the fire patrolmen and forest wardens. The fire patrolmen, who travel by automobile, and are provided with fire-fighting equipment, are in constant touch with the fire towers and ready to respond promptly in case of fires. There are about 550 forest wardens scattered over the State at points where the fire danger is greatest. These are non-salaried employees, paid only for the time that they are actually fighting fire.

In each district there is a District Forest Warden, who assists the District Forester during the fire seasons, about two months in the fall and two months in the spring. In addition to the organization maintained by the Department, there is close co-operation between the Volunteer Fire Companies and a number of large industrial concerns, which may be called upon in emergencies. The organization has been greatly strengthened in the last two years by the erection of

new fire towers, the employment of fire patrolmen, and encouraging the wardens to organize special registered crews to respond quickly to fires; also by providing the wardens with efficient fire-fighting tools.

Roadside Trees—The Roadside Tree Law, enacted in 1914, places under the administrative control of the Forestry Department the care and protection of trees growing along the highways throughout the State. This involves approximately two million trees, and no one may cut or trim any roadside trees growing within the right-of-way of a public highway without a permit from the Department. The cost of this work is borne entirely by the applicants for tree permits, of which 95% are the pole line companies, which require trimming to clear their wires. The work is done under the supervision of tree wardens, who are under the direction of the Forestry Department.

Much encouragement is given by the Forestry Department to the planting of trees along the highways by individuals and organizations. During the last two years approximately 15,000 roadside trees have been planted. The Department has given 2,000 free trees from the State Nursery for demonstration plantings along certain stretches of highway under specific conditions that meet the requirements for a demonstration planting.

State Forests—There are seven State Forests,—four in Garrett County, one in Washington County, and one lying partly in Baltimore and partly in Howard County, and a small demonstration forest in Talbot County.

The Garrett County Forests, comprising 2,826 acres, extend in the form of a crescent from Swallow Falls to Hutton. The forests are in charge of a Resident Warden, who protects them from fire and trespass and conducts the improvement work. In addition to the area that is State-owned, there are some 600 acres of land adjoining the State Forests which, under a co-operative arrangement, is operated as auxiliary State Forests. These forests are used for timber growing, watershed protection, and for camping and other forms of recreation.

The Fort Frederick Forest, embracing 190 acres of land, of which old Fort Frederick is the dominating feature, lies along the Potomac River about 15 miles west of Hagerstown. This forest serves two purposes, one as a scenic, historical spot centered around Fort Frederick, which was built in 1756 as a frontier defense against the Indians, and which is still in a good state of preservation and attracts a large number of people. The other purpose served is as a demonstration of forest planting. Ten plats of five acres each, planted in different species of trees, are being tried out, and serve not only as a demonstration of suitable species but of correct spacing and methods of planting.

The Patapsco Forest lies along the Patapsco River, about 10 miles west of Baltimore, and consists of 1,116 acres. This is used primarily for recreation, although other forest activities, such as forest planting and demonstrations of thinnings and improvement work, are conducted. Each year there are many hundreds of people who visit this forest for picnic parties, hiking and camping. Some 300 camp sites have been located and are used each summer by hundreds of people for from one to ten weeks.

The Seth Demonstration Forest of 65 acres, near Easton, Talbot County, was given to the State during the past year as a memorial to Gen. Jos. B. Seth by his widow. General Seth was a devoted friend of forestry, and up to the time of his death, in November, 1927, was actively interested in better forest management for Talbot County and for the State. This forest is to be used to demonstrate the best forestry practices for farm woodlands in the Eastern Shore section.

TECHNICAL WORK

The Forestry Department maintains a staff of seven technical foresters, who are available for making examinations and giving advice to owners of woodlands and those who are interested in forest planting. This is regarded as a most important work in securing better forestry practice throughout the State. The service is without charge in making examinations, and arrangement is made for giving expert service and supervision in conducting woodland operations or planting projects at nominal cost. During the past two years 157 examinations of forest lands for private owners were made, and in 29 cases a selective marking of trees, timber estimates and assistance in marketing forest products was given by the Forestry Department.

During each summer investigations are conducted by members of the Forester's staff in determining forest conditions, forest resources and forest uses. In the last two years special investigations in the study of important species of trees, studies in the cutting and utilization of forest products, studies of fire damage, and a tree survey of roadsides have been conducted. An office service has been maintained for the identification of trees and wood from specimens presented and for advice as to identification and treatment of tree insects and diseases.

EDUCATION

Since practically all the forest lands of the State are privately owned, and the forest problems are therefore in private hands for solution, the advance of forestry must be largely through educational methods. From the beginning the Department has stressed this feature of its work, with the result that the practices and purposes of

forestry are becoming generally known throughout the State. This has been brought about through various agencies, chief among them being the popular lectures and addresses given before the Service Clubs, civic organizations and schools, reaching all classes of people throughout the State. The Department maintains a very large collection of photographs, over one thousand lantern slides, most of them beautifully colored; stereopticons, moving-picture machines, and other equipment for presentation of a subject which can be most attractively presented in this way. During the past two years 266 such lectures were given.

College Lectures—The State Forester, as head of the Department of Forestry of the University of Maryland, conducts a course in Farm Forestry every second year, open to juniors and seniors in the Agricultural School. The course consists of two lectures and three hours' field work each week during the second semester in alternate years. It was given in 1927 and will be given again in 1929. The purpose of the course is not to train men for professional forestry work, as this would require at least four full years, but to give to the students in agriculture sufficient fundamental knowledge to handle intelligently and successfully farm woodlands, which constitute an important part of every farm.

Publications—The results of investigations are set forth in publications, from time to time issued by the Forestry Department, containing information of practical value to the people of the State. During the past two years seven leaflets, two booklets, and two annual reports were issued.

Exhibits—The Department furnishes exhibits on various forestry subjects, which are set up at county fairs and loaned to schools and other responsible organizations. One of these exhibits, showing the old method and the improved method of making maple sugar and syrup from sugar maple trees, and constituting an important industry in Garrett County, Maryland, was shown at the Garrett and Washington County Fairs and attracted a great deal of interest. In addition, special exhibits were shown at 12 other places.

Demonstrations—One of the most effective means of inducing woodland owners to practice forestry has been conducting demonstrations in timber marking, measuring, thinning, and improvement cutting in various parts of the State. Much of this work has been done in co-operation with the Extension Service, and has brought the practice of methods of handling woodlands to forest owners in hundreds of communities in various parts of the State.

Through the Newsletter, issued monthly by the Department, newspaper articles, and the various agencies enumerated above, the For-

estry Department is carrying the ideas of practical forestry, forest protection and forest planting into practically every community.

The Forestry Department issues an annual report covering in detail its activities. The reports for the past two years have been issued and will be sent upon application.

Respectfully submitted,

F. W. BESLEY,
State Forester.

The Extension Service

To the President of the University:

In submitting the biennial report for the Extension Service, it is gratifying to note conservative development in all phases of the work. The greatest handicap has been the difficulty of meeting the demands of the farmers and home-makers of the State for increased service. The acute conditions surrounding the agricultural industry have focused the growers' attention upon all aids and agencies that could in any way assist them to improve their economic conditions.

During 1927 a decided improvement was experienced by the farmers of Maryland over recent years. Weather conditions during 1927 and 1928, however, have not been normal; in fact, the growing season of 1927 was very uncertain. Nevertheless, the weather was not so unfavorable as during the season of 1928. In reviewing conditions for the past year, the hazards which the farmer must constantly face and over which he has but little, if any, control stand out most strikingly. The weather, marked by two severe wind and rain storms during the height of the growing season, severely injured the corn crop in many sections, proved disastrous to the quality and yield of tobacco, severely curtailed the production of canning tomatoes, and did considerable damage to miscellaneous truck crops in the State. Growing conditions for other crops were not particularly favorable, and there, unfortunately, appeared to be little or no compensation in the form of higher prices to offset the losses occasioned by decreased production. In 1927, notwithstanding the vagaries of the weather, most crops came through the season with production records that were far better than had been anticipated. Prices, too, in 1927, showed a tendency to offset some of the effects of decreased production. Live-stock prices advanced during 1926 and 1927 and are still on a fair level, considering other agricultural products. The dairy industry continues on a sound basis, with indications of expansion in several counties. Prices for poultry were somewhat lower than during 1926, but eggs were in good demand.

The farmers went into the 1928 season with a great deal of optimism. Despite the discouraging weather conditions, followed by the low prices for many crops, the situation may be said to be hopeful in that the ensuing year, it is expected, will give a fair margin of return to the great body of Maryland farmers who have suffered considerable losses during the past season.

PROGRESS OF EXTENSION WORK

Many outstanding features may be cited in listing the progress of the Extension work during the past two years. A County Agent has been maintained in all of the counties of the State, and a Home Demonstration Agent in all but three counties. Plans are under way now for arranging for the installation of Home Demonstration Agents in the three remaining counties. In this particular, the Extension Service of Maryland is outstanding in its efforts to assist the rural women and to improve the rural home.

The policy inaugurated with the establishment of the Extension work in Maryland, that it should be supported wholly from public funds, is one that we feel is best calculated to serve all the farmers and to produce the most satisfactory results. Splendid co-operation is extended the agents and the members of the Service throughout the counties of the State. Reasonable appropriations have been made by the counties for the support of the work, and a sympathetic response has been given to every plan for improving the economic situation of the farmer or home-maker. Splendid development has taken place in the boys' and girls' club work, and the passage of the Capper-Ketcham Act by Congress, permitting the addition of Assistant Agents or Club Workers in several of the counties of the State, should largely develop this important phase of our Extension activities. The boys and girls of today will be the farmers and farm women of tomorrow, and every effort to inculcate in them a desire for farm life and to demonstrate to them economic principles that should guide future farming operations will be invaluable to the State.

Alfalfa Campaign

One of the outstanding features of the work in 1928 was the conduct of an alfalfa campaign on the Eastern Shore. Primarily, its purpose was to increase the supply of high-grade home-grown feeds in a section of the State where dairying had developed rapidly. The campaign was concentrated in five counties and was conducted simultaneously in all. It proved highly successful in increasing alfalfa acreage, in stimulating interest in improved dairy feed production, and in providing the necessary means for lowering the cost of milk production.

The Control of Smut in Wheat

A survey of wheat fields prior to the 1927 harvest, and reports from millers, elevator owners, and buyers made it plain that the farmers were experiencing some severe losses from smut in wheat. As a result, a carefully planned campaign was conducted during the late Summer and early Fall months of 1927 and 1928 to encourage

a greater number of farmers to treat seed wheat with copper carbonate dust. Efforts were centered on securing the necessary equipment for treating wheat. Commercial treating machines were made available in many of the counties, and this equipment was supplemented by home-made devices. More than 200,000 bushels of seed wheat were treated as a result of the campaign in the Fall of 1927, and the campaign was carried on during the past year with very satisfactory results.

Seed Corn Work

Good progress is being made in the selection of seed corn for the State. The crop of 1926 matured under most unfavorable conditions, and early in 1927 there was a scarcity of seed in the State. This situation was brought forcibly to the attention of the farmers at numerous demonstration meetings held for the purpose of acquainting farmers with the methods of determining good seed corn. While the corn production during the past year (1928) was disappointing, yet there was sufficient high-grade corn raised to make a very creditable display at the International Grain and Hay Show at Chicago. In all, nineteen premiums were awarded on Maryland corn at the International.

Ten-Ton Production Contest

As a means of stimulating interest in the low-cost production of canning tomatoes, the Extension Service co-operated with the Tri-State Packers' Association and other agencies during 1928 in the inauguration of a Maryland ten-ton production contest. Attractive prizes were provided for growers securing the best acre yields during the year. Unfortunately, weather conditions proved most unfavorable. However, fourteen of the one hundred and eleven growers entering the contest were successful in obtaining a yield of ten tons or better. The best yield recorded was made by John W. Howard of Caroline County, who produced an average of 12.52 tons per acre. Notwithstanding the poor weather conditions, the growers in the contest produced yields more than double the average for the State. The project was most successful in stressing the important features in good tomato production and the essential factors in low-cost production.

Livestock Development

Considerable progress in the major branches of the livestock industry has been in evidence during the year. The sheep industry is expanding. Probably more early lambs of good quality were shipped from the State during 1928 than during any previous period. This has been brought about by the introduction of high-grade rams and ewes and through improved methods of management. For the first

time in years the State was able to occupy a place as an exporter of breeding stock, and thirty-two pure-bred rams were shipped to Tennessee for use by lamb producers of that State.

Demonstrations in baby beef production in Maryland by 4-H Club members in Washington and Frederick Counties again proved successful in stimulating interest in this particular phase of the beef cattle industry. In Washington County forty-five baby beeves were fed in accordance with the recommendations of the Extension Service and were sold at public auction for \$6,448.41. In Frederick County Club members bought and fed eight animals which sold for \$1,733.16. These demonstrations are most successful in bringing to the attention of beef cattle feeders the possibilities of baby beef production under Maryland conditions.

Progress in Dairying

In the field of dairying, work during the past two years has been directed primarily toward improving the quality of milk produced and lowering production costs through the increased use of suitable home-grown feeds, elimination of unprofitable cows, and the introduction of proven sires. The Calf Club work among the 4-H Club members has been productive of satisfactory results. As in former years, it received the encouragement of the Timonium State Fair and splendid prizes were offered, both for animals exhibited by Club members and at the annual State Dairy Cattle Judging Contest. There have been expansions of the dairy industry, notably in Somerset, Worcester and Garrett Counties. Especial improvement has been made in the advanced registry service during 1928. A supervisor has been put in charge and the work placed under the administration of the Extension Service.

Poultry Development

Certification of poultry as a means of improving breeding flocks throughout Maryland has made outstanding progress during the past two years. In co-operation with the Maryland State Poultry Association, the Service has been able to employ part-time assistants to aid in this important work. In 1927 certification was provided for thirty-nine flocks. It has been difficult for our specialists and agents to meet the demands of the poultry producers, for the tremendous increase in the number of poultry flocks, as well as different types of poultry, has increased the demands for assistance in this industry. Especially is this true in connection with the turkey industry. Turkey tours have been held on the Eastern Shore and in Southern Maryland, where flocks of as many as fifteen hundred turkeys raised on one farm were visited by more than five hundred interested poultry raisers. Very successful field meetings have been held at the plant

of Mr. and Mrs. H. M. Baker, who have been leaders in the development of the turkey industry in the State.

Horticultural Work

The program in fruit production during the past two years has been based upon the improvement in fruit quality. The season of 1928 was more favorable than that of 1927, the yield being about 20 per cent higher. Demonstrations have been conducted in the proper use of fertilizers, pruning, cover crops, and fruit thinning. More than twenty-one orchard management demonstrations are showing good results from the use of recommended cover crops. Our specialists have assisted in the work of the Horticultural Society and served as judges at many fruit shows. The inspection service has greatly aided in raising the standards of Maryland fruit. Nevertheless much remains to be done to improve the quality and standards of Maryland fruits if their competitive position in the market is to be strengthened.

Landscape Gardening

A constantly increasing demand is in evidence for landscape and floricultural work in the State. In fact, it has been difficult to meet the demand for assistance with the limited force. Everyone with a home is giving more attention to its aesthetic value. The work is extending to public school and church grounds and civic centers in our small towns. This is most desirable, and agents and specialists are doing everything to encourage the planting of flowers, trees, and shrubs in an attractive manner around farm and town homes.

Vegetable Gardening

The vegetable industry represents a large and important phase of agricultural activity in many sections of the State. In some counties truck crops are the leading cash crops of the farmer. Special help has been rendered in the selection of varieties, in cultural methods, and in the control of insect pests and plant diseases. Much work remains to be done in this important field, and it is hoped that we may be able to allocate a full-time specialist to work with agents and farmers on their truck crop problems.

Forestry Work

Four major projects featured the forestry activities of the Extension Service during the past years. These included forest planting on waste, abandoned or eroded land; thinnings and improvement cuttings in immature and cut-over stands of timber; proper logging methods and utilization of merchantable stands of timber and plant-

ing windbreaks and shelterbelts. A forest area constituting 22% of the total land area of the State, and an idle or waste farm land area aggregating 180,000 acres, call for constructive forestry activities. The Extension Service, working in close co-operation with the State Forestry Department, is reaching a greater number of farm woodlot owners than ever before. Seven forest planting demonstrations are in progress in seven counties, involving the planting of more than 28,300 trees, the greater percentage of which were one year old loblolly pine seedlings. A total of more than 22 woodland improvement demonstrations have been conducted in 11 counties. At these demonstrations desirable farm forestry practices are shown in the woods especially as they relate to the proper harvesting of the mature crop and the principal methods employed in developing woodland improvements.

Progress in Marketing

The necessity of emphasizing the economical marketing of farm products under prevailing conditions has led all forces of the Extension Service to devote strenuous efforts to the development of this important phase of farming during the past two years. The Extension Conference held last year was devoted exclusively to considering the vital marketing problems surrounding practically all of our agricultural products. Lack of funds has prevented our carrying on this work as vigorously as we would desire. With only \$10,000 made available by the 1925 Legislature, and with no increase since that time, it has been difficult to meet the demands for this important work. However, with the concentration of all of our forces and all other funds as far as possible aiding in this work, much progress has been made. Shipping point inspection has been made available during these years by the State Department of Markets in co-operation with the U. S. Department of Agriculture to the principal fruit and vegetable producing areas of the State. During 1927, 1,682 cars of fruits and vegetables were inspected for a total of forty-six growers. The inspections covered apples, peaches, pears, potatoes, tomatoes, sweet potatoes, cucumbers, and cantaloupes. A splendid growth has been registered in this work during the past year, 1928. In all, 2,329 cars of fruits and vegetables were inspected for growers and shippers, approximately sixty per cent of them meeting the necessary requirements for classification as U. S. No. 1 grade. The inspection service has been found one of the most potent factors in impressing upon growers the necessity for better grading and standardization of their products. It is hoped that we may be able to extend this service to cover other crops, as well as the large majority of carload shipments of all vegetable and fruit products.

An interesting and valuable survey of the Baltimore Livestock Market was completed during 1928 by Mr. B. B. Derrick in co-opera-

tion with the Bureau of Agricultural Economics, U. S. Department of Agriculture. This survey gave a comprehensive picture of the Baltimore market and emphasized the many advantages that this market now presents to our livestock producers. Efforts are also under way, in co-operation with the Baltimore Association of Commerce, to improve marketing facilities in the City of Baltimore for farm products as well as livestock.

Washington Market Problem

The Extension Service, in co-operation with farm organizations, has spent much time in studying the relocation of the Washington Farmers' Market. Considerable time and effort have been spent on this project because of its vital importance to the Maryland farmers in the vicinity of the District of Columbia. Our efforts have been directed towards securing a suitably located and adequately equipped market that would be in the interests of both the producer and consumer. This has been a very vital issue to the 500 producers conducting their business on the Washington market. There have been many factors involved in the situation and the issue is not as yet closed. We are still using our best efforts to have the market located in a part of the city which will make it of greater service to consumer and producer alike. It is hoped that a model farmers' market may be erected in the Capital City.

Home Demonstration Work

Splendid progress has marked the work of our Home Demonstration Division during the past two years. Farm women generally are responding more enthusiastically to this work than ever before; 1928 was a banner year for increased interest in the project work done by women and girls. A home management project, including the installation of water systems, change in kitchen plans, and time schedules met with popular favor, for farm families are thinking in terms of more conveniences than ever before. In one county the want, solution, action and satisfaction plan was used to launch the project by which more than three hundred new homes were reached, ninety-five of which made actual contacts with the agent, securing help and advice with some household management problem. The best plan for reaching the home-makers is through organized groups. This method enables the home demonstration agent to give help to a greater number of rural homes. The women like to meet in groups, because of the opportunities for social contacts. Interest becomes keener when they learn what other women are doing. Group activities develop leadership which is greatly needed among farm people.

Thirty-five achievement days were held in seventeen counties, with programs and reports planned to mark a certain milestone reached

in whatever project the home-makers had carried on through the year. Two counties had county tours in place of achievement days. Our home demonstration agents are constantly assisting in community activities and analyzing community needs with a view to developing community interest and helpfulness. We are much gratified at the response that our agents and specialists in home demonstration work are receiving from the farm women of the State.

Boys' and Girls' 4-H Club Work

A steady growth in boys' and girls' club work has been made during the past two years, although limited funds and personnel have not permitted us to reach as many farm boys and girls as we desire. The passage of the Capper-Ketcham Act of the last Congress will be a great assistance in aiding the further development of this important activity of our Extension Service. More than five thousand boys and girls are engaged in practical demonstrations with crops, livestock and home projects. Club teams have represented the State at the National Dairy Show, the Springfield Exhibition, and the National Congress of Boys and Girls at Chicago. At the wonderful demonstration at Chicago a group of Allegany County girls won first prize for their exhibits of canning and exhibits of clothing. Maryland girls likewise were awarded premiums. One hundred and twelve club dairy animals were exhibited at the Timonium Fair, ninety-six in club classes and more than a score in open classes. A group of Jersey Club calves was shown at various exhibitions. Excellent swine exhibits were shown by club members in 1927 and 1928, and in both years club members from Montgomery County won the State 150-day ton-litter contest against all breeders. As previously mentioned, the baby beef work has been outstanding.

The club girls of Maryland have made many worthwhile achievements, particularly in their clothing and canning projects. The training for local leaders has been conducted through conferences and by means of local leader news letters. It is gratifying to find many older club girls continuing their club work as local leaders of younger groups. Perhaps the greatest goal in club work is to develop a keener and more enlightened leadership in the country. With additional assistance which is now being provided in a number of the counties, it is hoped that we shall be able to place greater emphasis upon club work.

Rural Women's Short Course

The Rural Women's Short Course, conducted under the auspices of the Service at the University of Maryland during each summer, has been an outstanding success. More than five hundred women from

twenty-one counties attended this course. It is a most stimulating feature of the home demonstration work. The farm women are enabled to get away from home for a change and to attend lectures and demonstrations in home economics that are invaluable to them. Many States are following the policy of encouraging such a short course in home demonstration work. Other features of the home demonstration work in the several counties have progressed in an effective manner.

Insect and Disease Control

Much effort is expended by our Extension forces in close association with the officers of the State Horticultural Department for the control of insect pests and plant diseases. Work in disease control has been conducted on the following crops: barley, beans, cabbage, cantaloupes, corn, cucumbers, Irish and sweet potatoes, apples, peaches, tobacco, tomatoes, and wheat. When we consider that one disease alone, such as the cucumber mosaic, was so severe as to cause a loss of fifty per cent of the crop, or approximately one hundred thousand dollars in one county, some idea can be given of the importance of rendering assistance to our growers for the control of diseases affecting crops. In the case of the cucumber mosaic, work with growers has progressed to the point where a reduction of from fifty per cent in 1926 to about five per cent in 1928 in the losses from this disease has been brought about, thus assuring a saving of approximately ninety thousand dollars to the growers of one county. Potato diseases cause an estimated loss of a million bushels a year in Maryland. Every effort is being made to reduce this loss to the minimum. Effective work has been done by our pathologists in connection with certified seed and with tours where growers may observe the practical demonstration of the work in disease control. The same can be said of diseases attacking peaches and apples, as well as sweet potatoes. Wildfire, a comparatively new and little known tobacco disease in the State before 1920, has developed and become quite destructive, so that vigorous efforts have been required to acquaint the growers with practical means of controlling the disease in the tobacco beds. Reference has been made to the campaigns for the control of smut in wheat.

Various insect pests have required the vigilance of our specialists in entomology. The bean beetle, especially, caused tremendous concern during 1928. This insect has spread through the State and has largely affected the bean-canning industry. Additional funds are needed to meet the constantly increasing demands of the growers for assistance in the control of these various pests.

Canning Crops Work

The last Legislature made available an appropriation of \$10,000.00 for the encouragement and development of canning crops work in the State. Two specialists have been employed and are devoting their whole time to this project. The past season has been most unfavorable to the demonstration projects in this work. The growing conditions were so unusual that crops did not have a normal opportunity to react to cultural practices. Work in this field included a continuation of the community plant bed project. More than one and one-half million plants were produced under ideal conditions. Five cloth-covered plant beds were tried out in Maryland in 1927. During the past season there were thirty-nine such demonstrations. Twenty-nine variety tests conducted during the past three years gave fine results in showing the yielding ability of various varieties of tomatoes under Maryland conditions. Fifty-two acres of tomatoes were put out for seed-saving purposes by the Tri-State Packers' Association under the direct supervision of the Extension Service specialists. The inauguration of the ten-ton tomato club, previously referred to, was one of the outstanding features of the 1928 work. Special work has been conducted in sweet corn and peas. The packing of sweet corn represents a large industry, and the growers have been anxious to have the same help extended to them that we have extended to the tomato industry. Efforts are being made to inaugurate the saving of good home-grown seed corn as we are doing in the saving of tomato seed. The same is true in connection with miscellaneous work with peas and other canning crops.

Co-operation of Farm Organizations

Fine co-operation exists between the Extension Service and the farmers' organizations of the State, including the Maryland Farm Bureau Federation, the State Grange, the State Dairymen's Association, the Tobacco Growers' Association, and affiliated associations. There are some very real problems in connection with farm organization work, and it is a pleasure and privilege for our forces to work with the farm leaders of the State in endeavoring to solve their many problems. Every effort has been made to aid and assist our various co-operatives, and we are hoping that the ground thus laid for organization among farmers will be more fruitful in the coming years. There is much yet to be accomplished in the proper organizing of our farm people.

Southern Maryland Immigration Commission

During the past two years Extension Service representatives have co-operated with the members of the Southern Maryland Immigra-

tion Commission in developing as far as possible the agricultural resources of Southern Maryland. The Director has served as Secretary of the Commission, and several attractive publications have been issued which were prepared by representatives of the Service. Much correspondence has been carried on for the Commission, as well as assistance rendered to persons desiring to locate in that section of the State. The office is constantly receiving letters from people all over the country inquiring concerning the agricultural possibilities of various sections of Maryland. There is need for a booklet descriptive of all sections of the State.

Exhibits Needed

There is a constant demand made upon the Service for agricultural exhibits at our county and state fairs. An appropriation has been requested for many years to aid in meeting these demands. Such has not been available, however, and we have endeavored to do our best to satisfy the various fair organizations requesting help along this line. This presents a practical means of extending education, for oftentimes farmers will view exhibits and will see the lesson that otherwise could not be conveyed to them. It is hoped that in the near future we may be able to secure sufficient funds to develop proper exhibits to accommodate all of our county fairs.

Certified Seed Work

Reference has been made to the developments in certified seed. An appropriation has been requested for the promotion of this work. Nothing is more valuable than for farmers to be insured against using poor seed. There is also wonderful opportunity for the farmers of the State to develop the production of certified seeds of various kinds for sale in Maryland and elsewhere. More than fifteen thousand bushels of certified seed potatoes were produced and certified in Worcester County in 1928. We are anxious to extend this work to other counties and to other crops. A start has been made, but the limitation of funds has curtailed its development.

Conclusion

This report presents a most inadequate summary of the various activities of the Extension Service. A full report of the various projects conducted during the year, 1927, will be found in the Director's report. A similar annual report will be issued shortly for 1928. The Service is grateful for the splendid co-operation extended by the farmers and farm women of the State in carrying out the Extension program. We are likewise indebted to the county boards in the various counties for their sympathetic co-operation and encour-

agement. Even during the past two years, when the tax problem has been serious, no reductions have been made in the support given by the counties in their co-operation with the State and Federal governments for the maintenance of the county and home demonstration agents. We have a splendid force of men and women in the Service who are devoting their utmost energy and skill to rendering service to the rural people of the State. While a substantial amount of money is being devoted to Extension activities in the State, yet it is surprising to realize the increasing demands in the various industries.

The Service is indebted to Dr. H. J. Patterson, Dean of the College of Agriculture and Director of the Experiment Station, and his associates for their able assistance and sympathetic co-operation. The Director and members of the Extension staff are deeply appreciative of the interest and cordial support given to their every undertaking by President R. A. Pearson and by the officials in charge of the Extension Service, U. S. Department of Agriculture.

Respectfully submitted,

T. B. SYMONS,
Director.

The Feed, Fertilizer and Lime Inspection Service

To the President of the University:

The following constitutes a condensed report of the activities of the Feed, Fertilizer and Lime Inspection Service for the years 1927 and 1928:

AUTHORIZATION

The Feed Stuff Law in effect June 1, 1920; the Fertilizer Law in effect June 1, 1922, and the Agricultural Lime Law in effect June 1, 1912, authorizes an inspection department which constitutes a branch of the chemical department of the University. This organization is charged with the truthful labeling and legitimate selling of all products embraced by the above-mentioned Statutes.

In the interests of clarity and convenience, the report will be given under the general sub-heading of the industries controlled.

FEED

The following table outlines in condensed form the inspection activities of the Feed Department for the calendar years 1927-1928:

Condensed Statement of Activities

| | 1927 | 1928 |
|--|----------|----------|
| Samples Collected by Inspectors..... | 1586 | 1732 |
| Samples Forwarded by Residents..... | 183 | 208 |
| Licenses Issued (Brands Licensed)..... | 1582 | 1773 |
| Receipts | \$26,140 | \$27,730 |
| Prosecutions Instigated (Federal)..... | 9 | 19 |
| Prosecutions Instigated (State)..... | 8 | 11 |
| Rebates Secured for Residents..... | \$290 | \$368 |

An examination of this statement clearly indicates a decided annual increase in the volume of work handled. A comparison of the number of samples secured in 1926 with the year 1928 shows an increase of approximately 40%. This may be attributed to closer inspection by the Department, to a greater demand on the part of agricultural interests for proprietary mixed feeds and the fact that many local dealers who previously had acted merely as retailers are now entering the manufacturing field.

In addition to the examination of official samples, which are collected by our Inspectors, departmental chemists analyze gratuitously a large number of samples that are forwarded to College Park by residents of the State. By this co-operation a greater spirit of confidence is placed in the Department as well as the feed industry by users of mixed feeds. It also enables the small manufacturer to correctly formulate guaranties for products about to be placed upon the market.

The Feed Law of Maryland provides an annual registration fee of \$20 for each product sold or distributed. The number of licenses, and naturally the receipts from these licenses, have increased materially. This has necessitated the installation of new equipment as well as arranging for assistance for the chemical force.

Acting under authority vested in State officials by Section 5 of the Federal Food and Drug Act, 28 consignments of feed which in some way appeared to violate this Federal Statute were referred to proper governmental officials for their consideration. This co-operation applies only to goods shipped in interstate commerce and affords an opportunity of protecting our local trade by proceeding direct against the out-of-state shipper or the party directly responsible for the offense committed.

Although we consider the laws under which we operate corrective rather than punitive, we are compelled occasionally to resort to the courts. However, violators of our Feed Law are beginning to realize that it is the best policy for all concerned to market a legitimate product and to correctly inform the user as to its composition.

FERTILIZER

The following table includes a report of the activities of the department as regards the fertilizer inspection activities for the past two years:

Condensed Statement of Activities

| | 1927 | 1928 |
|--|-------------|-------------|
| Samples Collected by Inspectors..... | 1288 | 1461 |
| Samples Forwarded by Residents..... | 90 | 107 |
| Licenses Issued (Brands Licensed)..... | 1034 | 969 |
| Receipts | \$21,151.86 | \$17,037.39 |
| Rebates Secured by Residents..... | \$251 | \$265 |

These data indicate a marked increase in the number of official samples secured by our representatives as well as those forwarded by fertilizer users. This increase is attributed to the greater demand for commercial fertilizers by farmers of the State, as tonnage records reveal the consumption of 3,000 more tons over the past two years than in the corresponding preceding period. Our chemical examina-

tions have resulted in certain fertilizer users being the recipients of rebates covering deficiencies in shipments made to them. However, the great majority of fertilizer is marketed legitimately and the public honestly informed as to its character.

LIME

Following the procedure used in reporting activities of the other industries, the following table has been prepared showing the results of Lime Inspection for 1927 and 1928:

Condensed Statement of Activities

| | 1927 | 1928 |
|--|--------|--------|
| Samples Collected by Inspectors..... | 96 | 110 |
| Samples Forwarded by Residents..... | 38 | 47 |
| Licenses Issued (Brands Licensed)..... | 81 | 86 |
| Receipts | \$1350 | \$1155 |
| Legal Adjustments | 4 | 5 |

Very little change is noted in our lime work from year to year, in the revenue and samples collected. We also detect but very few deficiencies in the agricultural limes sold in Maryland. Any violations detected are usually followed with immediate adjustments by manufacturers.

PUBLICATIONS

This department is charged with the publication of all results of inspection. These data are included in five bulletins which are forwarded residents of the State each year. The information contained therein is of distinct value in that it affords means for an intelligent selection of purchases.

GENERAL SUMMARY

During the past two years law enforcement activities, as applying to feed, fertilizer and lime, have been greatly extended and intensified with the result that the trade has, through closer contact with our Department and its representatives, arrived at a more thorough and sympathetic understanding of its aims and operations. The suspicion and latent enmity which our earlier efforts frequently encountered have, in the main, given way to a spirit of cordial co-operation. Our representatives are no longer looked upon as detectives or policemen, but as technical advisers who assist dealers in the legitimate selling of products and manufacturers in producing legal and therefore marketable materials. Most manufacturers and dealers earnestly desire to comply with all reasonable regulations, not only on ethical grounds but also because it is the part of good business. Recognizing this, the Department has chosen to regard our laws as corrective

rather than punitive, and has adopted an "advisory before the act" attitude by offering constructive suggestions which should enable manufacturers to keep their products in compliance with State statutes. It has not hesitated, however, to initiate proceedings under the laws in instances where negligence or wilfulness on the part of the shipper indicated such action to be proper, or where the protection of the interests of consumers demanded it.

Respectfully submitted,

L. E. BOPST,
Associate State Chemist.

The State Horticultural Department

To the President of the University:

The general administration of the State Horticultural Department is under the Extension Service. Many phases of the work of the two agencies are closely allied and are conducted jointly by specialists in Extension for insect and plant disease control. By this close co-operation greater efficiency is attained in the control of various insect and disease pests in the State.

The following are extracts from the reports of the State Entomologist and State Pathologist:

REPORT OF THE STATE ENTOMOLOGIST

The staff consists of P. D. Sanders, C. Graham, W. T. Henerey and E. N. Cory. All of these employees are on a part-time basis, and the entomologist divides his time between the regulatory, extension, experimental and teaching activities, with administrative supervision over the entire field.

Nursery Inspection

Nurseries were inspected by the Departments of Entomology and Pathology during the year, totalling 59. The general condition of the nurseries is excellent. New problems, however, develop each year that require some particular attention. The inspection of narcissus bulb plantings entails a great amount of effort, and there is a tendency for more growers of perennials and greenhouse stock to secure certification of their products. *Eumeris* spp., the lesser bulb fly, apparently is established in the State. The boxwood midge, *Monarthropalpus buxi*, and the Iris borer, *Marcronoctua onusta*, required special attention during the past year. Imported stock examined during the current year totalled twenty packages, consisting of 246,000 seedlings, principally French apple seedlings and English manetti.

Special Certificates

Special certificates have been issued to a number of individuals for the shipment of plants. In most cases the shippers were not nurserymen, though in some cases special certificates have been issued to nurserymen to take care of transportation of stock prior to the issuance of their certificate and the printing of their regular tags.

Arsenical Residues

As in two previous years, this Department co-operated with the Commissioner of Foods and Drugs in determining the amount of arsenical residues that remained on the fruit in August. The collection of samples was made by this Department and forwarded for analyses to Baltimore. The spray calendar recommended by this Department has been followed consistently by the growers and no application of arsenicals was made subsequent to July 15. Analyses of the fruit showed no excessive residues at harvest time and the growers were so advised.

Eastern Plant Board

Dr. E. N. Cory continues to serve as Secretary-Treasurer of the Eastern Plant Board. The main work of this Association is the correlation and unification of procedure in regard to the regulation of the interstate movement of plant products, particularly from nurseries and greenhouses. Several Executive Board meetings have been held in New York and Washington, and the annual meeting in New York in November was well attended. It is felt that this agency will be able to do much towards creating a better understanding between the officials and growers and in the unification of regional procedure. The organization sends two delegates to the National Plant Board, composed of representatives of the four regional boards that include membership from all of the States in the Union.

Agricultural Work

A start was made in the inspection of apiaries, known or suspected to be infected with American foulbrood. Thirteen apiaries were inspected, totalling 512 colonies of bees. Eighty-four cases of disease were discovered and directions for treatment were given. All colonies were given the clean-up treatment. Bacteriological determinations of the presence of the disease were determined by this Department and confirmed by the U. S. Department of Agriculture, Office of Apiculture.

The Japanese Beetle

By far the outstanding insect problem in this State is the presence of the Japanese Beetle at several points, and the consequent endeavor of the State Horticultural Department to clean up these isolated infestations, and in so far as possible to eradicate the beetle. Efforts of this character, of course, would have little value if the whole State were to be included in the Federal quarantine, thus opening the way for rapid infestation of the intervening territory.

The entire sentiment of the horticultural and agricultural interests in this State is solidly behind the efforts of this Department to prevent the inclusion of the State in the Federal quarantine. When this matter was presented to the University of Maryland authorities, and through them to the Governor, he was most sympathetic with regard to the policies and included in his budget an emergency insect control fund of \$10,000 to be used in repressive measures for the Japanese beetle. Funds were made available in order that work could be carried on in the Fall of 1927 and Spring of 1928.

The repressive measures that were followed were developed by the Japanese Beetle Laboratory and seemed to give such excellent results in the control of grubs in the soil around ornamental nursery stock and in golf greens that they were adopted for this campaign. The Federal Horticultural Board, now the Plant Quarantine and Control Administration, has been most helpful throughout the work in the loan of equipment and men. A brief resume of the life history of the Japanese beetle will explain the vulnerable stages of the insect that may be attacked. The eggs are deposited in sod land and hatch into grubs in a few weeks. From September through to June the grubs remain in the soil, but during cold weather go too deep for soil sprays to kill them.

Description of Soil Treatment

The soil treatment consists of spraying three pints of dilute carbon bisulphide emulsion on each square foot of soil of sod surface within the area where it is thought probable that Japanese Beetle grubs may be present. This inference is based upon the finding of adult beetles by Federal scouts during the preceding summer. For many years the State has been scouted. During 1928 this survey of the State has been especially thorough. Every town of any size or importance has been scouted, and Baltimore, Perryville, Chesapeake City, Ridgely, Delmar and Cambridge have been scouted repeatedly. Results of the 1927 and 1928 scouting are herewith included.

Record of All Japanese Beetles Found in Maryland

| City | 1926 | 1927 | 1928 |
|-----------------|------|------|------|
| Baltimore | 2 | 30 | 190 |
| Cambridge | | 11 | 11 |
| Chesapeake City | | 213 | 271 |
| Delmar | | | 38 |
| Elkton | | | 5 |
| Frederick | | | 2 |
| Hagerstown | | | 1 |
| Ridgely | | 1 | |
| Perryville | | 1 | 68 |
| Perry Point | | | 2 |
| Andersontown | | | 1 |

Summary of Treatment

Summarizing the results obtained by the treatments leads the entomologist to believe that the expenditure of \$13,000 in the five areas last year in an effort to reduce the spread of the beetle has been amply justified. Out of twelve areas treated in Baltimore, beetles were found in only six, under the most intensive scouting. In five of these areas there was an increase, but the adjacent territory seems to be uninfested. In all of the small towns outside of Baltimore, except Perryville, the natural rate of increase has apparently been checked, and at Ridgely no beetles were found.

The intangible results to business cannot be placed on a dollar basis, but anyone who is familiar with the many interruptions of trade attendant upon quarantine enforcement can estimate the saving to shippers, nurserymen and farmers by reason of the absence of restrictive regulations. Undoubtedly, the time will come when the Japanese Beetle Quarantine will be so expensive, due to enlargement of the area, that it will have to be discontinued. Therefore, any measures that will slow down the distribution and rate of increase of the beetle until better methods of control are worked out or introduced parasites become more effective will mean a large ultimate saving.

With the co-operation of the University authorities, the growers and farmers of the State, and Governor Ritchie we have been able to give such assurance to the Federal authorities as to permit us to continue to treat the isolated infestations and thus save the State thousands of dollars by withholding Federal quarantine.

Bean Beetle

There has been a tremendous infestation by the Mexican Bean Beetle. This insect, which came from the South, occurred in isolated spots a few years ago and during the past two years has practically spread throughout the entire State and now is a very decided pest to beans. Particularly does it affect the canning industry and special means are being taken to enlighten the growers concerning most effective means of combatting this pest. No special funds have been appropriated for its control and we are endeavoring to use present forces and means toward successfully fighting the beetle.

Numerous other insect pests that have been with us could be cited which are causing tremendous losses, but every means now known is being employed by our growers for their control.

REPORT OF THE STATE PATHOLOGIST

The destruction wrought by crop disease in Maryland is very large. The following estimated losses from crop diseases reported for Mary-

land by the Federal Plant Disease Survey for the year 1926 (the latest available) will give some idea of their great economic importance:

| Crop | Total Production in Maryland | Total Losses from Diseases in Maryland |
|-----------------|---------------------------------|---|
| Corn | 22,049,000 bu. | 4,677,000 bu. |
| Potato | 3,960,000 bu. | 1,166,000 bu. |
| Wheat | 11,960,000 bu. | 1,082,000 bu. |
| Apple | 3,500,000 bu. | 743,000 bu. |
| Peach | 700,000 bu. | 187,000 bu. |
| S. Potato | 1,815,000 bu. | 182,000 bu. |
| Tomato | 502,000 bu. | 142,000 bu. |
| Pear | 394,000 bu. | 92,000 bu. |
| Oats | 1,706,000 bu. | 53,000 bu. |
| Bean | 632,000 bu. | 30,000 bu. |
| Barley | 343,000 bu. | 12,000 bu. |
| Rye | 270,000 bu. | 3,000 bu. |
| Grape | 1,330 tons | 244 tons |

Prof. C. E. Temple, who serves as State Pathologist, divides his time between regulatory, extension and teaching activities. Dr. R. A. Jehle, Extension Pathologist, devotes full time to Extension pathology and also assists in a number of features of regulatory work for the control of disease. Mr. H. A. Hunter serves as canning crops pathologist and assists generally in disease control work affecting canning crops.

The spray service, conducted in co-operation with the entomological and extension workers, provides for giving timely information to growers for the control of disease as well as insects.

Identification of Disease Specimen

Hundreds of plant disease specimens are sent to the University from all parts of the State for identification and advice as to their control. Likewise hundreds of letters are received from growers relative to plant diseases. The State Pathologist co-operates with the Entomologist in the issuance of certificates to nurseries and in other regulatory matters involving diseases and insects.

Seed Certification

The plant disease officials assist in the development of certification of seed, one of the requirements being absence from disease. The most important phase of the potato disease control work is certification of seed potatoes. About fifty per cent of the potato seed used in Maryland is home-grown seed. The improvement in quality of this seed since certification work was begun has appreciably increased the quality of the potato crop throughout the State.

Certification of tomato seed was started this year by a project of the Maryland Seed Certification Board. The seed acreage of the Tri-State Packers' Association was inspected and approved for certification.

Control of Bean Diseases

The work in connection with control of bean diseases centers around the control of anthracnose and blight. Special efforts have been made to secure reliable disease-free seed to aid in reducing loss of this crop.

Control of Peach and Apple Diseases

The control of disease and insect pests is one of the problems of orchardists and in order to assist the fruit growers of Virginia, West Virginia and Maryland in controlling these problems, a conference of specialists of these States is held annually for the purpose of devising the most practical spray recommendations for the region.

Control of Truck Crop Diseases

With the development of truck crops in the State many problems have arisen in connection with disease control affecting particularly sweet potatoes, cucumbers, cantaloupes, etc. Special tests are being conducted through extension agencies with a view of demonstrating practical remedies for controlling diseases affecting these crops.

Conclusion

Many problems in insect and disease control have been necessarily eliminated in this summarized report. The work as a whole is reported fully by the specialists and officers of the respective departments.

As pointed out, this work is closely associated with Extension activities and in many cases no dividing line can be drawn. For that reason the work is being conducted in co-operation with all agencies so that the greatest good can come from available funds. There is a constant demand on the part of growers for additional help in the control of both insect pests and plant diseases. It has been unfortunate that considerable increased funds have been necessary for the control of the Japanese Beetle. The efforts of the department in this direction, however, have been worth thousands of dollars to the people of the State.

Respectfully submitted,

T. B. SYMONS,
Director.

Maryland State Board of Agriculture Livestock Sanitary Service

To the President of the University:

The following is a report of the work of the Livestock Sanitary Service of the State Board of Agriculture from October 1st, 1926, to September 30th, 1928:

BOVINE TUBERCULOSIS ERADICATION

Tuberculosis eradication, which is being conducted with the co-operation of the Federal Bureau of Animal Industry, is progressing satisfactorily and there are in the State 25,815 herds comprising 174,322 cattle under supervision. Of these 5,957 herds, containing 68,410 cattle, are accredited. The herds in Maryland, from which milk is shipped to Baltimore, Md., and Washington, D. C., are now being tested at least once each year and extensive work has been done on the Eastern Shore of Maryland in testing the cattle from which milk is being sent to the Philadelphia market.

There were 13,391 cattle that had reacted to the tuberculin test slaughtered during the fiscal years of 1927 and 1928. The total number of cattle tested during that period, including original tests and retests of animals under supervision, was 257,692.

Maryland farmers and dairymen now have on the farms a better class of milk cows owing to the tubercular cattle having been replaced by higher grade animals and the milk production has increased to such an extent that this State ranks well up in the list of dairying States.

Dr. E. B. Simonds of the United States Bureau of Animal Industry has had charge of the tuberculosis eradication work here, and with the assistance of the County Agricultural Agents of the State Extension Service, the laboratories at College Park, and other branches of the University of Maryland, has been enabled to conduct an effective campaign against this disease.

HOG CHOLERA

Dr. I. K. Atherton, Inspector in charge of this project, makes the following report:

MR. JAMES B. GEORGE, *Director, Livestock Sanitary Service,
Maryland State Board of Agriculture, Baltimore, Md.*

Dear Mr. George: I have the honor to submit the following biennial report on the hog cholera work in Maryland for the period ending September 30, 1928.

The co-operating parties are the Livestock Sanitary Service of the Maryland State Board of Agriculture, the Extension Service of the University of Maryland, and the Bureau of Animal Industry of the United States Department of Agriculture.

The work has been conducted by four veterinarians and one secretary. Two veterinarians and one secretary are paid by the State of Maryland, while two veterinarians are paid by the United States Bureau of Animal Industry.

The following table shows the activities of the veterinarians for the period noted:

| | |
|--|---------|
| Number of Meetings Attended..... | 133 |
| Number Addressed..... | 42 |
| Total Attendance..... | 177,742 |
| Interviews: | |
| Farmers..... | 16,207 |
| Veterinarians..... | 1,240 |
| Others..... | 3,993 |
| Total..... | 21,440 |
| Farms Visited on Call..... | 2,394 |
| Voluntary Visits for Observation and Advice..... | 3,856 |
| Autopsies..... | 493 |
| Premises Carded..... | 1,158 |
| Premises Cleaned and Disinfected..... | 4 |
| Outbreaks Reported..... | 1,592 |
| Demonstration of Treatment: | |
| S. A. | 28 |
| V. S. | 3 |
| Total..... | 31 |
| Number of Hogs in Demonstration: | |
| S. A. | 555 |
| V. S. | 137 |
| Total..... | 692 |
| Attendance at Demonstration..... | 163 |
| Assisted Practitioners in Treating Herds: | |
| Well Herds..... | 16 |
| Number Hogs..... | 261 |
| Sick Herds..... | 21 |
| Number Hogs..... | 526 |
| Laymen Trained to Administer the Treatment: | |
| Serum Alone..... | 14 |
| Miles Traveled: | |
| Train..... | 5,966 |
| Other Conveyances..... | 112,766 |
| Total..... | 118,711 |
| Diagnosis: | |
| Cholera..... | 1,592 |
| Hem. Sep. | 1 |
| Necro. | 8 |
| Pneumonia..... | 29 |
| Tuberculosis..... | 7 |
| Other Diseases and Conditions..... | 374 |

For the two-year period ending September 30, 1928, hog cholera was reported to exist on 1,592 premises. While this is a slight increase

over the average, it was due to the extensive outbreaks of cholera in the Middle West. As is always the case when cholera is prevalent in the Corn Belt, infected pork enters the channel of trade and much of it reaches the hogs in Maryland through the feeding of garbage, table scraps, kitchen swill, etc.

Table Showing Outbreaks By Months

| | 1926 | 1927 | 1928 |
|-----------|------|------|------|
| January | | 46 | 15 |
| February | | 20 | 13 |
| March | | 24 | 23 |
| April | | 26 | 14 |
| May | | 15 | 15 |
| June | | 6 | 9 |
| July | | 39 | 26 |
| August | | 70 | 120 |
| September | | 133 | 262 |
| October | 222 | 170 | |
| November | 141 | 76 | |
| December | 82 | 25 | |
| Total | 445 | 650 | 497 |

Table Showing Outbreaks By Counties

| | |
|-----------------|-------|
| Anne Arundel | 73 |
| Allegany | 5 |
| Baltimore | 46 |
| Calvert | 30 |
| Caroline | 39 |
| Carroll | 40 |
| Cecil | 30 |
| Charles | 18 |
| Dorchester | 122 |
| Frederick | 59 |
| Harford | 37 |
| Howard | 24 |
| Kent | 77 |
| Montgomery | 73 |
| Prince George's | 72 |
| Queen Anne | 86 |
| St. Mary's | 57 |
| Somerset | 99 |
| Talbot | 118 |
| Washington | 195 |
| Wicomico | 105 |
| Worcester | 187 |
| Total | 1,592 |

Nine hundred seventy-five of the outbreaks reported were of the backyard type—that is, a few animals confined in small pens, mostly in the vicinity of towns, villages, etc.—although a few of this type occurred on truck farms. Six hundred seventeen occurred on farms

where hogs are bred and raised. This is less than 1% per annum of such farms in Maryland.

One thousand four hundred eighty-seven of the outbreaks reported were primary or new outbreaks, while one hundred five were secondary or due to spread of the infection to hogs on nearby premises.

Of the one thousand four hundred eighty-seven primary or new outbreaks one thousand two hundred eighty-three were due to the feeding of infected pork in garbage, table scraps, kitchen swill, etc. Eighty-five were due to the purchase of new stock, seven were due to the abuse of the double treatment, eight were due to unburied carcasses or infected premises left by departing tenants. One was a recurrence of the disease, four were due to carcasses washed in by the tide, while in ninety-nine instances the owners could or would not give any information on which to base the source of infection.

Of the one hundred five secondary outbreaks seventy-three were due to permitting hogs to run at large or to line fences or to the movement of infected hogs. Five were due to unburied carcasses, two were due to visiting of neighbors, one was due to drainage, one was due to movement of infected material, while in twenty-three cases no information was obtained on which to base the source of infection.

The following table gives a summary of the diagnosis of diseases of swine where investigations were made:

| | |
|---------------------------------|-------|
| Digestive Trouble | 163 |
| Hog Cholera | 1,592 |
| Septicaemia | 4 |
| Deficiency Disease | 76 |
| Pericarditis and Carditis..... | 3 |
| Necrotic Dermatitis | 3 |
| Poisoning (Food and Plant)..... | 24 |
| Enteritis | 31 |
| Hepatitis | 2 |
| Pneumonia | 30 |
| Otitis Media | 3 |
| Tuberculosis | 6 |
| Worms | 23 |
| Botulism | 8 |
| Injury | 12 |
| Cirrhosis of Liver..... | 2 |
| Peritonitis | 14 |
| Icterus | 2 |
| Tetanus | 3 |
| Dystokia | 1 |
| Tumor | 2 |
| Nephritis | 2 |
| Abortion | 1 |
| Mammitis | 3 |
| Bronchitis | 1 |
| Total..... | 2,011 |

The investigations regarding the source of infection for the period noted demonstrates that there are only three factors responsible for starting new outbreaks of cholera, viz.: infected pork, infected hogs, and abuse of the double treatment. It has also demonstrated that it was comparatively easy to prevent the spread of infection when the outbreaks were promptly reported. In fact, in every instance the secondary outbreak had occurred before the primary outbreak was reported or within ten days thereafter.

The outstanding feature for the period noted was the approval of the Maryland Plan for the Prevention of Hog Cholera by organizations and institutions of National character.

At the annual meeting of the United States Live Stock Sanitary Association, held in Chicago in December, 1927, that organization adopted a report of the Committee on Swine Diseases which practically approved the Maryland Plan in every particular.

In the latest bulletin issued by the United States Bureau of Animal Industry the following statement was made, which in reality confirms the Maryland Plan for the Prevention of Hog Cholera:

"Permanent reduction in losses from cholera can be expected only when farmers organize in a determined effort consisting principally of self-imposed quarantine, the continuous observance of sanitary precautions, and the early use of the serum treatment, should the herd become infected or dangerously exposed."

At the annual meeting of the American Veterinary Medicine Association, held in Minneapolis, Minn., in August, 1928, that organization adopted a report of the Committee on Prevention of Transmissible Diseases of Animals which stated in effect that the factors responsible for starting new outbreaks of hog cholera were infected hogs, infected pork, and the improper use of the serum-virus treatment.

Respectfully,

I. K. ATHERTON,
Inspector in Charge of Hog Cholera Work.

JOHNE'S DISEASE OR PARATUBERCULOSIS

No extensive work has been done to eradicate Johne's disease from the cattle in Maryland. A small number of animals have been tested and slaughtered.

SCABIES

Reports of Sheep Scabies on farms on the Eastern Shore of this State led to investigations, and it was found necessary, during the

summer and fall of 1928, to do quite extensive work in that section. The infection has been materially reduced. This work will be continued.

CONTAGIOUS ABORTION

This disease is a real menace to the dairy herds of the State and more work should be conducted to hold it in check looking to eventual eradication.

OTHER DISEASES

There has been a decrease in the number of other diseases found in the State, which has allowed the force of veterinary inspectors to confine their effort, to a greater extent, to the main projects—tuberculosis eradication and hog cholera work.

Dr. E. M. Pickens, Pathologist and Bacteriologist, in charge of scientific work of the Livestock Sanitary Service, reports as follows: MR. J. B. GEORGE, *Director, Livestock Sanitary Service,*

*Maryland State Board of Agriculture,
816 Fidelity Building, Baltimore, Md.*

My dear Mr. George: I herewith submit for your consideration the following report on the activities of the Livestock Sanitary and the Biological Laboratories for the biennium ending September 30, 1928, as well as some of the more imperative needs for the future.

This period has been one of unusual activity along these lines. The Staff has been seriously handicapped in meeting the demands of the State, as the facilities for work have not increased.

Laboratory Work:

The assistance rendered the people of the State during the above-named period consists, among other things, of the preparation and distribution of the following products:

| | 1926-27 | 1927-28 |
|---|--------------|--------------|
| Autogenous Bacterins | 9,855 c.c. | 16,225 c.c. |
| Legume Inoculum | 10,366 tubes | 8,414 tubes |
| Tuberculin, both Subcutaneous and Intradermal | 20,800 c.c. | 14,454 c.c. |
| Products purchased and distributed at approximate cost: | | |
| Anti-Hog-Cholera Serum | 677,450 c.c. | 572,450 c.c. |
| Hog Cholera Virus..... | 1,195 c.c. | 480 c.c. |
| Disinfectants | 22 gals. | 10 1/8 gals. |
| Miscellaneous Articles | 30 | 47 |

The following examinations of animals or materials have been made, some of which necessitated field trips and miles traveled, as shown:

| | 1926-27 | 1927-28 |
|---|---------|---------|
| Water Analyses | 104 | 108 |
| Hog Cases | 289 | 942 |
| Milk Analyses | 1,232 | 1,226 |
| Mastitis in Cattle..... | 82 | 136 |
| Rabies | 29 | 15 |
| Parasites | 401 | 220 |
| Contagious Abortion Tests..... | 2,116 | 3,883 |
| Anthrax | | 2 |
| Tuberculosis | 331 | 234 |
| Sheep Diseases | 396 | 77 |
| Blackleg | 2 | 10 |
| Botulism | | 4 |
| Johne's Disease | 14 | 187 |
| Physical Examinations of Animals..... | | 45 |
| Post-Mortem Examinations | 78 | 57 |
| Agglutination Test Brucella Abortus Homo..... | | 2,433 |
| Periodic Ophthalmia | | 28 |
| Miscellaneous Diseases and Examinations..... | 198 | 334 |
| Field Trips | 94 | 106 |
| Miles Traveled | 6,914 | 6,430 |

At the James Todd Laboratory the following examinations have been made for poultry diseases, as well as chemical analyses performed:

| | 1926-27 | 1927-28 |
|---|---------|---------|
| Feeding Tests in Cases of Suspected Poisoning | 9 | 4 |
| Examinations for Parasites..... | 53 | 110 |
| Infectious Bronchitis | 1 | 6 |
| Fowl Typhoid | 3 | 8 |
| Roup | 5 | 4 |
| Tumors | 1 | 10 |
| Blood Test for Bacillary White Diarrhoea..... | 130 | 4,178 |
| Blackhead | 2 | 11 |
| Chemical Analyses | 19 | 20 |
| Bacillary White Diarrhoea (Bact. Exam.)..... | 4 | 36 |
| Miscellaneous | 78 | 58 |

Research:

Research work has been completed, or there is a sufficient amount of data on hand to warrant publications, on the following subjects:

1. Natural Weight Curve of One Hundred Guinea Pigs for a Period of One Year.
2. The Weight Curve of One Hundred Tubercular Guinea Pigs.
3. The Proper Age at Which to Immunize Hogs Against Cholera, and the Length of Time Such An Immunity May Be Expected to Last.
4. A New Oyster Disease.
5. Examinations on 2,000 Human Sera for Bacillus Abortus Agglutinins.

6. The Intra-venous Tuberculin Test.
7. Johne's Disease Case Report.
8. Coccidiosis in Calves.
9. The Bang Organism Is Yielding Before the Onslaught of the Pure-Bred Breeder.

Publications:

Unfortunately, our routine work has increased until we have trouble in finding time for the preparation of manuscripts for publication. We have succeeded, however, in completing the following articles, which have either been published by a member of the Staff, or are at present in the hands of the publishers:

1. A Resume of the Laws and Regulations for the Control of Rabies.
2. The Susceptibility of Suckling Pigs to Hog Cholera.
3. The Susceptibility of Weaned Pigs to Hog Cholera.
4. Contagious Abortion in Dairy Cattle.
5. A Heart-to-Heart Talk with Mr. Average Dairyman.
6. The Influence of the pH. of Agar Media Upon Bacterial Counts of Raw and Pasteurized Milk. (Faber.)
7. Coccidiosis in Chickens.

Staff:

It is recommended that a new laboratory man and a field man be procured to be assigned to the contagious abortion project. It is also recommended that a new field man be procured for assignment to the poultry disease work, and that the salary of Dr. H. M. DeVolt be increased \$400.00, making a total of \$2,500.00 per year.

If the Ozone work is to be continued, a biological chemist should also be added to the Staff.

Laboratory Space and Equipment:

The diagnosis of the infectious diseases of animals must at present be made in a small room occupied by students. Working with sterile surroundings is absolutely impossible under such conditions. Further, several of the diseases handled in this laboratory, such as rabies, anthrax, tuberculosis, contagious abortion, etc., are directly transmissible to man. This condition constitutes a serious hazard, not only to the Staff, but to the students as well.

The incubator room, the wash room, the shipping room, and the sterilizer room mentioned in the Report for the Department of Bacteriology, would be used by these laboratories as well.

At the James Todd Laboratory the heating plant has reached the point where it will have to be replaced. It is doubtful whether or not it will last through the coming winter. If the Ozone work is to continue, additional apparatus and equipment for a bio-chemical and pathological laboratory, together with electric heating devices for

the rooms of the experimental animals, and a small fund for labor are also needed. Several costly experiments have been ruined by lack of this equipment.

A house for small animals, such as rabbits, white rats, and guinea pigs is badly needed. The United States Department of Agriculture has supplied our guinea pigs for experimental purposes during the past few years without charge. These animals are not only expensive to purchase, but we cannot depend upon those obtained in the open market. Our supply from the above source will be discontinued in the near future, due to the need of the Agricultural people for greater numbers of these animals. We will then be compelled to raise our own guinea pigs, if we are to continue experimental work. At present we have no adequate place for this project.

This laboratory and grounds house and confine all of the animals, including large and small animals and poultry used in the experimental work for the whole unit. The heavy demand by the farmers of the State for work with poultry diseases, during the past year, has necessitated some increase in facilities for this work. It is questionable, however, whether any money expended by this group of laboratories has rendered greater assistance, or has been more appreciated by the people than that used for this purpose. The extending of this work will require but little additional funds for feed, equipment, etc. It should be pushed as fast as these funds are available. The needs, then, for the care of the experimental animals and the poultry work are for a small building, a little more equipment, a fund for feed and for labor and care of buildings and grounds.

Another project which should receive our immediate attention, and one which is causing a great loss to dairymen today, is contagious abortion. As there are no funds available for this work, the farmers of the State are being given but little assistance. There is the greatest need for both experimental and field work on this subject. Hence the field man and the laboratory man mentioned under Staff should be obtained and assigned to this work. A modest sum per year for this project should yield returns that would be of the greatest value and assistance to the Animal Industry of the State.

Very respectfully submitted,

E. M. PICKENS,

Pathologist and Bacteriologist.

In making this report we wish to say that the splendid co-operation of the practicing veterinarians in Maryland has contributed materially to the success in the control of animal diseases.

Respectfully submitted,

JAMES B. GEORGE,

Director.

Maryland State Board of Agriculture

Livestock Sanitary Service

STATE OF APPROPRIATIONS AND EXPENDITURES FOR THE YEAR ENDING SEPTEMBER 30, 1927

| Item No. | SALARIES: | Appropriation | Expenditure |
|--|--|---------------|--------------|
| 1. | Director | \$4,100.00 | \$4,100.00 |
| 2. | Pathologist | 1,700.00 | 1,700.00 |
| 3. | Pathologist and Bacteriologist..... | 2,400.00 | 2,400.00 |
| 4. | Chemist | 3,500.00 | 3,500.00 |
| 5. | Chief Veterinary Inspector..... | 3,000.00 | 3,000.00 |
| 6. | Chief Field Veterinarian..... | 3,000.00 | 3,000.00 |
| 7. | Veterinary Inspectors | 12,960.00 | 12,960.00 |
| 8. | Veterinarian, Stock Yards. | 2,175.00 | 2,175.00 |
| 9. | Assistant Pathologist | 1,250.00 | 1,250.00 |
| 10. | Laboratory Assistant | 340.00 | 340.00 |
| 12. | B. A. I. Inspector, Hog Cholera Erad. | 3,600.00 | 3,600.00 |
| 13. | Senior Clerk, Tuberculosis Erad. | 1,200.00 | 1,200.00 |
| 14. | Senior Account Clerk | 1,500.00 | 1,500.00 |
| 15. | Stenographer, Baltimore Office | 1,500.00 | 1,500.00 |
| 16. | Stenographer, College Park Office..... | 1,000.00 | 1,000.00 |
| 17. | Stenographer, Hog Cholera Erad..... | 1,000.00 | 1,000.00 |
| 18. | Inspector, Hog Cholera Erad..... | 2,400.00 | 2,400.00 |
| 18a. | B. A. I. Inspector, in Charge Tuber. Erad. | 225.00 | 225.00 |
| 19. | Special Payments | 1,293.50 | 1,293.50 |
| Total Salaries | | \$48,143.50 | \$48,143.50 |
| OPERATING EXPENSES: | | | |
| 20. | Traveling | \$9,890.10 | \$9,890.10 |
| 21. | Transportation | 8.52 | 8.52 |
| 22. | Communication | 750.00 | 750.00 |
| 23. | Office Supplies and Stationery..... | 322.00 | 322.00 |
| 24. | Printing | 122.00 | 122.00 |
| 25. | Medical and Surgical Supplies..... | 672.93 | 672.93 |
| 26. | Laboratory Supplies | 283.99 | 283.99 |
| 27. | Other Supplies | 2,247.93 | 2,247.93 |
| 28. | Office Equipment | 464.21 | 464.21 |
| 29. | Other Equipment | 606.69 | 606.69 |
| 30. | Rent | 3,848.64 | 3,848.64 |
| 31. | Tuberculosis Erad. Indemnities..... | 128,829.49 | 128,829.04 |
| Total Expenses..... | | \$148,046.50 | \$148,046.05 |
| SUMMARY: | | | |
| Total Appropriation | | \$196,190.00 | |
| Total Expenditures: | | | |
| Salaries | | \$ 48,143.50 | |
| Operating Expenses | | 148,046.05 | |
| | | | 196,189.55 |
| Balance in Hands of Comptroller (Item No. 31)..... | | \$ | .45 |

STATEMENT OF EXPENDITURES FROM BUDGET OF
1927-1928

| Item No. | SALARIES: | Appropriations | Expenditures | Balances |
|--------------------------|--|----------------|--------------|------------|
| 1. | Director | \$4,100.00 | \$4,100.00 | |
| 2. | Pathologist | 1,700.00 | 1,700.00 | |
| 3. | Pathologist and Bacteriologist | 2,400.00 | 2,400.00 | |
| 4. | Chemist | 3,500.00 | 3,500.00 | |
| 5. | Chief Veterinary Inspector | 3,000.00 | 3,000.00 | |
| 6. | Chief Field Veterinarian | 1,625.00 | 1,625.00 | |
| 7. | Veterinary Inspectors..... | 12,257.49 | 12,257.49 | |
| 8. | Veterinarian, Stock Yds. | 2,400.00 | 2,400.00 | |
| 9. | Assistant Pathologist | 1,250.00 | 1,250.00 | |
| 10. | Laboratory Assistant | 303.33 | 303.33 | |
| 12. | B. A. I. Inspector in Charge Hog Cholera Eradication | 3,600.00 | 3,600.00 | |
| 13. | Senior Clerk, T. E. | 1,200.00 | 1,200.00 | |
| 14. | Account Clerk | 1,500.00 | 1,500.00 | |
| 15. | Stenographer, Baltimore Office | 1,362.50 | 1,362.50 | |
| 16. | Stenographer, Col. Park Office | 1,000.00 | 1,000.00 | |
| 17. | Stenographer, Hog Chol. Eradication | 991.63 | 991.63 | |
| 18. | Inspector, Hog Cholera Eradication | 2,400.00 | 2,400.00 | |
| 19. | Special Payments..... | 3,876.66 | 1,376.66 | \$2,500.00 |
| Total Salaries | | \$48,466.61 | \$45,966.61 | |
| OPERATING EXPENSES: | | | | |
| 20. | Traveling | \$10,543.15 | \$10,543.15 | |
| 21. | Transportation | 6.10 | 6.10 | |
| 22. | Communication | 1,030.00 | 1,030.00 | |
| 23. | Office Supplies and Stationery | 379.66 | 379.16 | .50 |
| 24. | Printing | 634.90 | 633.10 | 1.80 |
| 25. | Medical and Surgical Supplies | 769.93 | 765.95 | 3.98 |
| 26. | Laboratory Supplies | 528.79 | 476.48 | 52.31 |
| 27. | Other Supplies | 2,972.11 | 2,944.47 | 27.64 |
| 28. | Office Equipment | 668.64 | 665.59 | 3.05 |
| 29. | Other Equipment | 27.20 | 27.20 | |
| 30. | Rent | 3,848.64 | 3,848.64 | |
| 31. | T.E. Indemnities | \$126,314.27 | | |
| | Special Appropriations | 20,000.00 | | |
| | | 146,314.27 | 146,313.93 | .34 |
| 32. | Repayment Farmers' Notes | 50,000.00 | 50,000.00 | |
| 33. | T.E. Indemnities to October 1, 1928 | 25,000.00 | 25,000.00 | |
| Total Operating Exp..... | | \$242,723.39 | \$242,633.77 | |

SUMMARY:

| | | |
|--|---------------------|---------------------|
| Total Appropriation | | \$291,190.00 |
| Total Expenditures: | | |
| Salaries | \$ 45,966.61 | |
| Operating Expenses | 242,633.77 | |
| | <u>\$288,600.38</u> | |
| Balance in hands of Comptroller to Revert to | | |
| Treasury | 89.62 | |
| Balance in Hands of Comptroller..... | 2,500.00 | |
| | <u>\$291,190.00</u> | <u>\$291,190.00</u> |

INVENTORIES

September 30, 1928.

SUMMARY:

| | | | |
|---|-------------------|-------------------|-------------------|
| Office Equipment as of September 30, 1926..... | \$4,834.11 | | |
| Other Equipment as of September 30, 1926..... | | \$ 971.90 | |
| Total Equipment as of September 30, 1926..... | | | \$5,806.01 |
| Office Equipment Purchases from September 30, 1926, to September 30, 1928..... | 1,116.02 | | |
| Other Equipment Purchases from September 30, 1926, to September 30, 1928..... | | 95.58 | |
| Total Office and Other Equipment Purchases September 30, 1926, to September 30, 1928..... | | | <u>1,211.60</u> |
| Total Office and Other Equipment Inventory | <u>\$5,950.13</u> | <u>\$1,067.48</u> | <u>\$7,017.61</u> |

SUMMARY:

| | | | |
|------------------------------|-----------|-------------------|--|
| Consumable Supplies on Hand: | | | |
| Office Supplies | \$ 355.75 | | |
| Other Supplies | 2,221.36 | | |
| Total..... | | <u>\$2,577.11</u> | |

The Geological Survey

To the President of the University:

The Maryland Geological Survey has been continuing the work of former years. During the biennium which has passed the Survey has continued its investigation of the crystalline rocks of central Maryland and conducted an extensive investigation of the possibilities of discovering available deposits of molding sand.

In co-operation with the U. S. Bureau of Mines, it has continued the compilation of statistics of the mineral products of the State for the years 1927 and 1928, such statistics being published both in the reports on the "Mineral Resources of the United States" and in the reports of the State Geological Survey as occasion arises. The figures are used as soon as obtained in answering the numerous letters of inquiry which come to the Survey office.

During the period the Survey has revised the topographic maps of Montgomery, Dorchester, Kent, and St. Mary's Counties and has issued new editions of Hagerstown; also of Frederick, Montgomery, and Prince George's Counties; and the soil map of Garrett County. The topographic map of Dorchester County is in press and will soon appear, while the manuscripts for Kent and St. Mary's Counties are in the hands of the printer.

The Survey has also issued Volume XII of its general series, covering reports on the Molding Sands of Maryland, by Dr. David W. Trainer, Jr.; Notes on the Feldspar, Quartz Chrome, and Manganese of Maryland, by Dr. Joseph T. Singewald, Jr.; the Serpentine of Harford County, by Dr. Albert Johannsen, and the Gabbros and Associated Intrusive Rocks of Harford County, by Dr. Herbert Insley.

The geological map of Carroll County, by Dr. Jonas, has also been issued, as part of the report on the geology of that county. Manuscripts have been prepared on the various topics dealing with the physical features of Baltimore County which will be issued during the coming year.

It is also appropriate to recall that the State Geologist, acting under instructions received from Governor Ritchie, co-operated with the State Geologist of Virginia in interpreting the exact location of the boundary line between Maryland and Virginia granted by the Award of 1877. This line has been the subject of controversy because the original arbitrators did not define the line cartographically along

the shores of the Potomac River, where they ruled that the boundary should run "from low-water mark at one headland to low-water mark at another without following indentations, bays, creeks, inlets, or affluent rivers." A report on the interpretation by the State Geologists of the interested States has been published and suggestion made as to the further legislation necessary to settle this question of controversy.

The *Maryland State Weather Service* has continued its work of co-operation with the U. S. Weather Bureau by which the State is enabled to maintain numerous voluntary observers and thereby obtain much valuable information of local interest which would not be obtainable by the work of the Federal bureau alone. The State Weather Service continues to compile the meteorological records of interest to crop growers and others interested in climatic conditions in Maryland and distributes literature and information indicating the desirable qualities of the climate of Maryland. This service has a very small appropriation, out of which it maintains clerical assistants for the compilation of the data of local interest. The direction of the service is entrusted to the State Geologist and the detailed work is under the immediate supervision of the Section Chief of the Baltimore office of the U. S. Weather Bureau.

Respectfully submitted,

EDWARD B. MATTHEWS,
State Geologist.

General Service Department

To the President of the University:

This report covers the operation of the Department of Buildings for two years ending October 1, 1928.

During that period, as provided by Legislative funds, two new buildings, erected by contract, were completed and occupied, viz.: a new Dining Hall and Chemistry. Service lines to these buildings, heat, light, water and sewer, were put in under the direction of the Superintendent of Buildings with the approval of the Building Engineer. To provide heat for same, one new 150-H. P. boiler replaced a boiler beyond service because of its age.

Shortly after occupancy of the new Chemistry building, because of shortage of funds with which to purchase, my department was called upon to build tables for the equipping of four laboratories, same to correspond to the Keewanee tables used elsewhere in the building. Although somewhat handicapped by lack of space and equipment for cabinet work, the concensus of opinion was that the job was very creditable.

In the latter part of 1926, completion by the Sanitary Commission of an eight-inch main to our tank placed their water supply available for all our buildings. Dairy, Stadium and the Experiment Station group had been receiving it for about six months.

Usual necessary repairs were made as to roofs, floors, walls, plumbing, heating and electric lines, with here and there painting.

Among the larger jobs were: Interior and exterior renovation of Farm and Practice houses; interior and exterior painting of Infirmary; exterior painting of sash of Agricultural and Engineering buildings, Library and Morrill Hall; tearing down and rebuilding Laundry; carrying steam to and eliminating boilers in Laundry and Canning house; installation in Horticultural building of ammonia refrigerating plant, previously furnishing refrigeration for old Dining Hall; usual renovation of Boys' Dormitories, exterior painting of sash; reputtying and painting Horticultural greenhouses; purchasing and erecting on south side a fire escape and placing in Morrill Hall metal ceilings, hence abating fire hazard; extending gas to Gymnasium; renewing with copper the galvanized iron guttering and snow guards on north, west and east sides of Agricultural building; changed approach to Agricultural building.

At the present time the old Chemistry building is being remodelled for use of the College of Home Economics.

While considerable has been done in way of repairs and improvements, much more is desirable. A new roof is needed on the Infirmary; new floors for the Agricultural building; construction of a trunk sewer line; installation of campus lights; elevators for the Dairy and Chemistry buildings; a new heavy-duty truck to replace our 1918 3½-ton Diamond T, and much more that I might add.

My department has two major needs—a central power plant, eliminating individual heating units in various buildings, and a service building, providing storage, shops, garage, etc. We are particularly cramped for working space, and have *no* storage.

Fire extinguishers were purchased, so that there is one for every 2,500 square feet of building area, giving us added protection and reducing insurance rates.

September 7th, 1928, the campus was placed under my charge, making it the Department of Buildings and Grounds. During the biennial period, but previous to my administration, concrete roads and walks were built, and much shrubbery planted on the campus. Since September 7th we have put in a walk from the Gymnasium to main gate, an 18-inch storm sewer, graded, fixed parking places and sodded.

Respectfully submitted,

H. L. CRISP,
Superintendent of Buildings and Grounds.

The Library (College Park)

To the President of the University:

The following report is for the biennium October 1, 1926, to September 30, 1928:

Use of the Library

That faculty and students are benefitting increasingly from library facilities is shown in the circulation statistics; 11,916 books loaned for home use shows an increase of 2,137 over the preceding biennium, and 37,298 charges for books kept in the library on reserve for classes shows an increase of 18,456 in this service.

One hundred fifteen volumes have been borrowed from libraries of other institutions for the use of members of our faculty and graduate students, a slight increase over the preceding biennium. Nine volumes have been loaned to other libraries and 84 volumes have been loaned to individuals in the State.

Additions to Books, Periodicals, Etc.

There are now about 25,000 volumes on the campus, mostly in the main library, a few thousand in department collections.

During the last biennium 3,567 books were purchased, 890 were received by gift and 1,572 volumes were added by binding periodicals, making a total of 6,029. An additional \$2,000 for books was available during this time, and it was possible to get some important reference works and back files of periodicals.

In 1927-28 the number of periodical subscriptions placed and paid for by the Library and the departments was 319 and those coming to the Library as gifts 57. Other serial publications received at the Library approximated 370.

Instruction to Freshmen, Cataloging, Binding

One hundred thirty-six freshmen in 1926-27 and 130 in 1927-28 were given the course in the use of reference books and the catalog. These classes were taught by the Librarian and two other members of the staff.

The volume of work done in cataloging is partly shown by the following figures: Five thousand three hundred forty-nine volumes cataloged, 9,052 cards made and filed in the catalog, and 3,529 other record cards made.

The 1,572 volumes of periodicals bound represents much additional work in collecting and preparing unbound numbers for binding.

Library Building

Since our last report the Legislature appropriated \$200,000 for a new Library building. This is our greatest need and when completed it will undoubtedly be one of the most appreciated features of the University. It is said by many librarians that a new building usually stimulates the use of the library to double what it formerly was. This is a highly desirable condition, contact with books being one of the great advantages available to college students, and it must be met with the necessary increases in books and service.

Needs

Partly because we now have an inadequate book collection and a staff too small to do the cataloging of new and old uncataloged books and to give reference service to readers and to supervise the work at the delivery desk, and partly because of the new demands that will come with occupation of larger quarters, we need an increased budget to allow for more books and more members of the staff.

University librarians have felt the need of some standard to govern the size of the Library budget. In an effort to arrive at some such standard a sub-committee of the Personnel Classification Committee of the American Library Association was appointed, and its report of December 29, 1928, was adopted. The following extract from this report may be useful:

1. A library expenditure of \$25 per student, exclusive of building maintenance and new construction, as a minimum sum for library support in institutions having less than 8,000 students and \$20 per student in universities having over 8,000 students.
2. The library expenditure as per the above limitations relating to building maintenance and new construction should not be less than 4 per cent of the total maintenance expenditures of the college or university. The two foregoing items when taken together form a stabilizing standard for college and university library maintenance.

If this standard were to be applied to our enrollment of about 1,200 students, our minimum library budget would be \$30,000. This is offered as a suggestion which should be helpful in determining how much increase in the Library budget is necessary in order to meet pressing demands.

Respectfully submitted,

GRACE BARNES,
Librarian.

THE LIBRARY (BALTIMORE)

To the President of the University:

I beg to submit a report of the Library of the University of Maryland in Baltimore for the biennium October, 1926, to October, 1928:
Number of Volumes:

| | |
|-------------------|--------|
| Scientific* | 21,807 |
| Law | 6,591 |
| Total | 28,398 |

Library hours, 9 A. M. to 10 P. M. daily, except Saturdays 9 A. M. to 5 P. M. during the University year. Closed Sundays.

Average daily attendance (all departments), 300.

Library has open shelves, open shelves under supervision, and locked bookcases.

Approximately eight thousand five hundred (8,500) books and journals circulated during a year on book receipts issued over the charging desk, in addition to overnight charges recorded in a charging book. We have no means of keeping a record of the books borrowed from the open shelves at the present time.

Library Staff: Librarian; assistant librarian (1), full time; assistant librarians (2), part time.

Domestic Help: Janitress, twice daily.

Library has no separate budget. It is budgeted with the "Central Office and Library." We would like to have a separate budget.

The University of Maryland, founded 1807, was the first medical college in this country to establish a library (1813). Its present home is Davidge Hall, an old church building, which was secured as a library location in 1907. This building, taken as an expedient, has been developed to its utmost resources. Physical changes: A gallery and three conference rooms for students were made several years ago. This relieved the congestion temporarily, but accessions to the library, its use by the faculties, students and alumni have so increased that we are in a worse position than formerly. Our quarters are woefully cramped and entirely lacking in the accommodations and equipment which make for a well-conducted library. We have reached our limit of expansion in this building.

There is also a lack of physical facilities, such as private offices for the Library Staff, and retiring rooms fitted with toilet facilities. This is a serious handicap.

We have a very valuable collection, which includes many of the early works in medicine, the allied sciences, and law, as well as ma-

*Medicine, Dentistry, Pharmacy.

terial of historical value; bound theses of the School of Medicine (1817-1886); autographs, portraits, busts, of the early faculties; portraits and records of the alumni of the University of Maryland in the World War, including those of our Gold Star men and women; the General Lafayette Memorial Flag, etc., etc. The fire hazard is great.

From its foundation (1813) the Library of the University of Maryland, in Baltimore, functioned for a century as a gift library, supported almost entirely by donations. For the past few years, however, the need of modern books and journals has been keenly felt, and the various departments are actively interested in building up the Library.

I desire to lay special emphasis on our needs in this brief report.

Respectfully submitted, •

RUTH LEE BRISCOE,
Librarian.

The Military Department

To the President of the University:

The work of this department is based upon the provisions of Army Regulations 145-10 and conducted in accordance with a Program of Instruction prescribed by the War Department.

The University of Maryland R. O. T. C. Unit consists of an infantry unit of the senior division of the Reserve Officers' Training Corps. The average strength for the past two years has been approximately as follows:

Seniors, 55; Juniors, 56; Sophomores, 180; Freshmen, 260. Sophomores and freshmen comprise the basic section, while seniors and juniors are members of the advanced section.

Students to be eligible for advanced course training must have satisfactorily completed the basic course. The selection is made by the President of the University upon the recommendation of the Professor of Military Science and Tactics, with the approval of the deans concerned. Students who successfully complete the advanced course are tendered a commission in the Officers' Reserve Corps. During the past two years the War Department has commissioned 55 graduates who qualified through training received in this department.

The classroom facilities and equipment for instruction in this department are adequate. The advanced course students are required to devote five (5) periods a week to instruction, while the basic course must devote three (3) a week.

All male students who are physically fit and over 14 years of age, and will be citizens of the United States at maturity, are eligible for admission to the R. O. T. C. course.

Uniform and equipment for the training of members of the Reserve Officers' Training Corps are furnished at the expense of the Government.

Military instruction at this institution is on a par with other University work and students receive credits for this work on the same basis.

The regular Army personnel on duty at the University of Maryland at the present time consists of one Major, Infantry, U. S. Army, Professor of Military Science and Tactics; one Captain, Infantry, U. S. Army; two First Lieutenants, Infantry, U. S. Army; one War-rant Officer, U. S. Army, and one Staff Sergeant. This personnel pro-

vides a commissioned officer as instructor for each group of students. Instruction other than classroom instruction, such as outdoor drills and exercises and target practice in the indoor gallery range, are under the direct supervision of the Professor of Military Science and Tactics, and is conducted by officers especially qualified for the work.

Although suitable drill grounds are available for ordinary "close order" drills and ceremonies, there are no adequate facilities for tactical instruction outdoors for a unit of the size of this one.

The instruction given under the Military Department has been of a character and standard satisfactory to the War Department and the University authorities.

Respectfully submitted,

R. S. LYTLE,
Major, Infantry, Dol. P. M. S. & T.

The Office of the Registrar

To the President of the University:

The following statistics show the enrollment of students during the past biennium and for the present year, and the degrees and certificates which have been conferred during the biennium. The enrollment figures for 1928-1929 are not complete, since there will be additional registrations for the second semester.

The enrollments in the College Park Colleges have shown a steady increase. Due to the increased entrance requirements in the Schools of Law and Dentistry, there has been a decrease in the enrollment of these schools, but as soon as they become readjusted to a two-year Pre-Law and a one-year Pre-Dental entrance requirement, respectively, they will undoubtedly resume their former status. Already this year, in the School of Dentistry, there is a decided increase over last year's enrollment figures.

ENROLLMENT OF STUDENTS

| <i>Resident:</i> | COLLEGE PARK | | 1926-1927 | | 1927-1928 | | *1928-1929 | |
|--|--------------|-------|-----------|-------|-----------|-------|------------|-------|
| | Men | Women | Total | Men | Women | Total | Men | Women |
| College of Agriculture..... | 120 | 3 | 123 | 122 | 2 | 124 | 136 | 4 |
| College of Arts and Sciences..... | 406 | 100 | 506 | 454 | 95 | 549 | 474 | 97 |
| College of Education..... | 47 | 84 | 131 | 40 | 99 | 139 | 38 | 105 |
| College of Engineering..... | 234 | ..... | 234 | 233 | ..... | 233 | 259 | 1 |
| College of Home Economics..... | ..... | 46 | 46 | ..... | 53 | 53 | ..... | 51 |
| Graduate School..... | 89 | 10 | 99 | 89 | 7 | 96 | 81 | 15 |
| Summer School..... | 136 | 341 | 477 | 178 | 394 | 572 | 205 | 421 |
| Practice School..... | 40 | 30 | 70 | 47 | 28 | 75 | 24 | 32 |
| Total Resident..... | 1,072 | 614 | 1,686 | 1,163 | 678 | 1,841 | 1,217 | 726 |
| Duplications..... | 55 | 19 | 74 | 56 | 20 | 76 | 30 | 64 |
| Net Total Resident..... | 1,017 | 595 | 1,612 | 1,107 | 658 | 1,765 | 1,187 | 662 |
| <i>Extension:</i> | | | | | | | | |
| College of Arts and Sciences..... | 11 | 1 | 12 | 8 | 1 | 9 | 4 | 1 |
| College of Education..... | 125 | 17 | 142 | 150 | 33 | 183 | 77 | 39 |
| College of Engineering..... | 207 | ..... | 207 | 176 | ..... | 176 | 171 | ..... |
| Summer School..... | 19 | ..... | 19 | ..... | ..... | ..... | ..... | ..... |
| Total Extension..... | 362 | 18 | 380 | 334 | 34 | 368 | 252 | 40 |
| Total College Park, Excluding Duplications..... | 1,379 | 613 | 1,992 | 1,441 | 692 | 2,133 | 1,439 | 702 |
| BALTIMORE | | | | | | | | |
| School of Dentistry..... | 393 | 2 | 395 | 367 | 2 | 369 | 381 | 2 |
| School of Law..... | 436 | 16 | 452 | 283 | 13 | 296 | 242 | 9 |
| School of Medicine..... | 362 | 9 | 371 | 379 | 12 | 391 | 398 | 13 |
| School of Nursing..... | ..... | 110 | 110 | ..... | 113 | 113 | ..... | 102 |
| School of Pharmacy..... | 264 | 13 | 277 | 344 | 14 | 358 | 345 | 23 |
| Total Baltimore..... | 1,455 | 150 | 1,605 | 1,373 | 154 | 1,527 | 1,366 | 149 |
| Grand Total, College Park and Baltimore, Excluding Duplications..... | 2,834 | 763 | 3,597 | 2,814 | 846 | 3,660 | 2,805 | 851 |
| *Figures for 1928-1929 are not complete, second semester registrations not being included. | | | | | | | | |

DEGREES AND CERTIFICATES CONFERRED COLLEGE PARK

| HONORARY DEGREES: | 1927 | 1928 |
|--|-------|-------|
| Doctor of Science | 1 | 1 |
| Doctor of Divinity | 1 | |
| Doctor of Laws | | 1 |
| | <hr/> | <hr/> |
| Total Honorary Degrees | 2 | 2 |
| ADVANCED DEGREES: | | |
| <i>Graduate School—</i> | | |
| Doctor of Philosophy | 4 | 7 |
| Master of Arts | 9 | 8 |
| Master of Science | 17 | 20 |
| <i>College of Engineering—</i> | | |
| Civil Engineer | | 2 |
| Electrical Engineer | | 1 |
| Mechanical Engineer | 1 | 1 |
| | <hr/> | <hr/> |
| Total Advanced Degrees..... | 31 | 39 |
| BACHELORS' DEGREES: | | |
| <i>College of Agriculture—</i> | | |
| Bachelor of Science..... | 28 | 24 |
| <i>College of Arts and Sciences—</i> | | |
| Bachelor of Arts | 47 | 41 |
| Bachelor of Science | 8 | 18 |
| <i>College of Education—</i> | | |
| Bachelor of Arts | 22 | 28 |
| Bachelor of Science | 6 | 11 |
| <i>College of Engineering—</i> | | |
| Bachelor of Science | 35 | 30 |
| <i>College of Home Economics—</i> | | |
| Bachelor of Science | 10 | 7 |
| | <hr/> | <hr/> |
| Total Bachelors' Degrees..... | 156 | 159 |
| TEACHERS' CERTIFICATES: | | |
| Special Diplomas | 41 | 56 |
| Certificates in Industrial Education | 4 | 9 |
| | <hr/> | <hr/> |
| Total Teachers' Certificates.... | 45 | 65 |

BALTIMORE

| | | |
|--------------------------------------|-----|----|
| <i>School of Commerce—</i> | | |
| Bachelor of Science in Business..... | 3 | 2 |
| Certificate in Business..... | 7 | 7 |
| <i>School of Dentistry—</i> | | |
| Doctor of Dental Surgery..... | 98 | 90 |
| <i>School of Law—</i> | | |
| Bachelor of Laws..... | 114 | 44 |
| <i>School of Medicine—</i> | | |
| Doctor of Medicine..... | 81 | 80 |
| <i>School of Nursing—</i> | | |
| Graduate in Nursing | 17 | 22 |
| <i>School of Pharmacy—</i> | | |
| Graduate in Pharmacy..... | 44 | 53 |
| Pharmaceutical Chemist | 2 | 2 |
| Bachelor of Science in Pharmacy..... | | 4 |

Eastern Branch of University of Maryland

To the President of the University:

The work of the Eastern Branch of the University of Maryland, under direction of Thomas H. Kiah, has made some progress during the last two years.

Faculty

The faculty consists of eleven men and five women, and the subjects which they cover include agriculture, horticulture, animal husbandry, woodworking, ironworking and printing, for men; household economy, cooking, sewing and dressmaking, for women. All are given courses in physical education, and all pursue scholastic subjects. The industrial subjects are chosen by the students, and when a subject is so chosen it is pursued for two or more years.

Enrollment

The enrollment for the biennium by sexes is as follows:

| | 1926-1927 | 1927-1928 |
|-------------|-----------|-----------|
| Boys | 82 | 78 |
| Girls | 76 | 75 |
| Totals..... | 158 | 153 |

Agriculture—

JOHN E. SMITH, *Director*

About 125 acres of land are under cultivation, part of the land being owned by the State and part by Morgan College Corporation. The usual farm crops of this region are raised. The teams, stock, and poultry on the farm consume a considerable portion of the crops produced, the surplus being sold in the open market. Experimental plots have been set aside for the purpose of testing seeds, fertilizers, etc.

Horticulture—

BARTON WHITE

Orchard fruits and small fruits are likewise cultivated. This department is responsible for the general appearance and upkeep of the grounds and campus and its work is well done.

Animal Husbandry—

CHARLES E. CLARK

The cows and a bull are of Guernsey breed, nearly all being registered stock. Hogs and poultry are also carefully selected with reference to the best types for breeding purposes. The sale of dairy and poultry products adds somewhat to the income under the head of local receipts.

The farm land owned by Morgan College has been tile drained, which adds greatly to its value.

Woodworking—

ROY L. CORDERY

Regular courses in woodworking are pursued, and in addition the chief repairs to furniture and buildings are made by the students under the direction of the head of the department.

Ironworking—

McKINLEY D. WRIGHT

Repairs to the farm implements and vehicles, and to a limited extent on automobiles for outsiders are effected by this department. This department also looks after the plumbing on the grounds at great saving to the administration.

Printing—

MASLIN F. PINKETT

The printing department fills all the stationery orders both for Morgan College and Eastern Branch and does small jobs for outside patrons.

Domestic Science—

MARY AMERSON

The work of this department for the girls is very carefully supervised. Plain and fancy cooking and serving are taught, and light lunches prepared for sale. All girls are taught cooking and serving.

Domestic Art—

BLANCHE JEWETT

Plain and fancy sewing, simple dressmaking are required of all girls. The use of various fabrics and the sources from which they come form a part of the course. Graduates are required to make the dresses used for graduating exercises.

Scholastic Subjects

Principal T. H. Kiah, Robert A. Grigsby, Virginia White, Daniel J. Pinkett, Lida L. Brown and Charles Harris take part in this work. Samuel Mansfield is assistant in the department of agriculture and also does scholastic work. A full four-year secondary course is presented, and in addition two years of junior college work.

Clerical—

CELESTINE KING

The work of the office, accounts, correspondence, etc., is well taken care of by Miss King, who has devoted considerable time and effort to bring this phase of the administration to a high point of efficiency.

Recommendations

There should be immediate strengthening of the junior college courses by the addition of one or perhaps two teachers who are experienced in the field of college education. The educational features of the industries should be emphasized and brought to the front as part of the regular training from the lowest to the highest grade. In short, the industries should be educationalized and the education courses should be industrialized. A proper correlation of the practical and scholastic subjects would mean very much to the development of the school. I understand that it is the aim of Dr. Pearson and those intimately associated with this work to accomplish this as rapidly as possible.

We mention with pleasure the hearty spirit of co-operation which Dr. Pearson and his staff have always given to the work of the Eastern Branch.

Respectfully submitted,
J. O. SPENCER.

Financial Report (College Park)

To the President of the University:

I have the honor to transmit herewith in the following pages a report of the financial transactions of the University located at College Park and Princess Anne for the biennium ended September 30, 1928.

The receipts of the University, exclusive of the Baltimore Branch, amounted to \$2,995,328.47 for operation, and \$362,795.15 for building and improvements to plant. The expenditures for the biennium reached a total of \$2,823,069.95 for operation and \$353,455.32 for buildings and improvements to plant, leaving an unexpended balance in the operating funds of \$172,258.52 and in the building funds of \$9,339.83. The latter balance does not include \$195,000 held in the State Treasury for the new Library building. Outstanding obligations in the nature of unpaid bills and uncompleted projects will use the balances.

In the group totals are shown certain funds for public service and regulatory work which, heretofore, have been accounted for through the departments where they are controlled. Beginning October 1, 1928, such funds will be accounted for separately, and future reports will show them in a separate group. The funds are as follows:

| | |
|-------------------------------------|-------------|
| Seed Inspection Fund..... | \$17,900.00 |
| State Dairymen's Association | 10,000.00 |
| State Horticulture Department | 25,120.00 |
| Insect Control | 16,134.54 |

Total for Public Service and Regulatory Work \$69,154.54

An appropriation of \$5,000 for Executive Expenses of the State Board of Agriculture is included in the University income and expenditures for the year 1926-1927. October 1, 1928, this fund was transferred to the office of the State Board of Agriculture in Baltimore. A report of the fund for 1927-28 submitted by Mr. J. B. George, Secretary, is shown following this report.

More help and more space is urgently requested for the financial department. The work of the department has more than doubled in the past decade, but the clerical staff has not changed in number. A great amount of overtime work is required of many of the members of the staff to meet the growing demands of State and Federal officials. This situation should be corrected for the best interest of this

important department of the University. Space should be provided for relieving the present crowded conditions of our files, and fireproof protection for important records.

Respectfully submitted,

M. F. McKENNEY,
Financial Secretary.

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UNIVERSITY OF MARYLAND AT COLLEGE PARK
FOR THE BIENNIUM ENDED SEPTEMBER 30, 1928**

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UNIVERSITY OF MARYLAND—COLLEGE PARK AND SUB-STATIONS

BALANCE SHEET, SEPTEMBER 30, 1928

| ASSETS | | LIABILITIES | |
|---|----------------|--|----------------|
| <i>Current:</i> | | <i>Accounts Payable:</i> | |
| Cash on Hand and in Banks | \$14,213.89 | General University | \$9,004.97 |
| Balance in State Treasury | 158,044.63 | Extension Service | 1,569.32 |
| | | Experiment Station | 6,545.06 |
| Petty Cash Fund—Dairy Manfg. Laboratory | | | \$17,119.35 |
| <i>Inventories:</i> | | <i>Unexpended Federal Funds:</i> | |
| Departmental Supplies | \$38,184.68 | General University | \$29,999.71 |
| Saleable Stock: | | Eastern Branch | 7,500.01 |
| Students' Supply Store | 4,761.68 | Experiment Station | 827.76 |
| University Press | 576.08 | Extension Service | 30,913.86 |
| Dairy Manufacturing Laboratory | 9,771.19 | | |
| | | State Working Fund | 69,241.34 |
| | | | 200,000.00 |
| <i>Accounts Receivable:</i> | | | |
| Federal Smith-Hughes | \$2,194.22 | | |
| Advanced Registry Testing | 263.60 | | |
| State Roads Commission | 1,312.50 | | |
| Students' Notes | 22,225.72 | | |
| Dairy Manufacturing Laboratory | 15,133.64 | | |
| Students' Supply Store | 353.26 | | |
| University Press | 846.70 | | |
| Unearned Insurance | | | |
| | 42,329.64 | | |
| | 23,900.40 | | |
| | \$292,082.19 | Total Current Liabilities | \$286,360.69 |
| Total Current Assets | | | |
| <i>Capital Assets:</i> | | <i>Reserve for Uncompleted Construction:</i> | |
| Land | \$104,400.00 | Library Building | \$200,000.00 |
| Buildings | 1,426,695.26 | Balance in Special Fund for Improvements | 5,079.53 |
| Equipment | 549,623.38 | | |
| Roads, Walks and Campus | 74,202.58 | | |
| | | Reserve for Petty Cash Fund | 205,079.53 |
| Building Construction Funds: | | | 300.00 |
| Balance in State Treasury | \$195,000.00 | | |
| Balance in Bank | 9,339.83 | Maintenance Surplus | 5,421.50 |
| Uncompleted Construction | 739.70 | Capital Surplus | 2,154,921.22 |
| | | | |
| Total | \$2,652,082.94 | Total | \$2,652,082.94 |

UNIVERSITY OF MARYLAND—COLLEGE PARK

CONSOLIDATED STATEMENT OF RECEIPTS AND EXPENDITURES FOR THE BIENNIUM 1926-1928

| | Balance October 1, 1926 | Total Income for Biennium | Total Receipts Biennium | Total Expenditures Biennium | Balance September 30, 1928 |
|---|-------------------------------|---------------------------------|-------------------------------|-----------------------------------|----------------------------------|
| General University—College Park (Schedules A, B, C, D, E, F) | \$ 128,081.63 | \$1,870,253.69 | \$1,998,335.32 | \$1,860,695.75 | \$ 137,639.57 |
| Eastern Branch—Princess Anne (Schedules A, B, C, D, E, F) | 7,698.52 | 70,199.56 | 77,898.08 | 70,123.10 | 7,774.93 |
| Experiment Station—College Park (Schedules A, B, C, D, E, F) | —1,770.54 | 391,281.38 | 389,510.84 | 391,372.02 | —1,861.18 |
| Extension Service—College Park (Schedules A, B, C, D, E, F) | 22,409.99 | 507,174.24 | 529,584.23 | 500,879.08 | 28,705.15 |
| Grand Totals Biennium 1926-1928 | \$ 156,419.60 | \$2,838,908.87 | \$2,995,328.47 | \$2,823,069.95 | *\$ 172,258.52 |
| Total Receipts for Biennium | | | \$2,995,328.47 | | |
| Total Expenditures for Biennium | | | 2,823,069.95 | | |
| Cash Balance September 30, 1928 | | | | \$ 172,258.52 | |
| Reconciliation of Cash Balances with Depositories and Cash on Hand: | | | | | |
| Union Trust Company of Maryland | | | | \$1,045.45 | |
| Citizens' National Bank of Laurel | | | | 4,814.87 | |
| First National Bank of Hyattsville | | | | 4,054.15 | |
| Bank of Ridgely | | | | 739.10 | |
| Cash on Hand | | | | 3,560.32 | |
| Total | | | | \$14,213.89 | |
| Balance in State Treasury | | | | 158,044.63 | |
| Total | | | | \$172,258.52 | |

*Approved projects have been set up which will use this balance.

UNIVERSITY OF MARYLAND—COLLEGE PARK AND SUB-STATIONS
SUMMARY OF INCOME FOR THE BIENNIUM 1926-1928

SCHEDULE A (1)

| INCOME | Total Income for Biennium | SOURCES OF INCOME | | | | Other Sources |
|---------------------------------------|---------------------------------|-------------------|-----------------|-----------------|--------------------|------------------|
| | | State Appro. | U. S. Appro. | Student Fees | Revolving Funds | |
| General University (Schedules C-D) | \$1,870,253.69 | \$ 509,390.33 | \$ 99,525.24 | \$ 623,312.39 | \$ 320,132.36 | \$ 317,893.37 |
| Eastern Branch (Schedules C-D) | 70,199.56 | 41,240.00 | 20,000.00 | 5,963.69 | ..... | 2,995.87 |
| Experiment Station (Schedules C-D) | 391,281.38 | 177,700.00 | 135,000.00 | ..... | ..... | 78,581.38 |
| Extension Service (Schedules C-D) | 507,174.24 | 299,794.22 | 154,919.51 | ..... | ..... | 52,460.51 |
| Total Income 1926-1928 | \$2,838,908.87 | \$1,028,124.55 | \$ 409,444.75 | \$ 629,276.08 | \$ 320,132.36 | \$ 451,931.13 |
| Cash Balances Oct. 1, 1926 | 156,419.60 | ..... | 60,246.06 | ..... | 10,756.63 | 85,416.91 |
| Total Receipts 1926-1928 | \$2,995,328.47 | \$1,028,124.55 | \$ 469,690.81 | \$ 629,276.08 | \$ 330,888.99 | \$ 537,348.04 |

STATEMENT OF EXPENDITURES FOR THE BIENNIUM 1926-1928

SCHEDULE A (2)

| EXPENDITURES | Total Expenditures Biennium | For | | | Student Refunds | Departmental Transfers, Etc. |
|--|-----------------------------------|-----------------------|-------------------|--------------------------------|--------------------|------------------------------------|
| | | Operating Expenses | Capital Outlay | Stock Purchased for Sale | | |
| General University (Schedules E, F, G, H) | \$1,860,695.75 | \$1,452,190.80 | \$ 94,769.36 | \$ 251,106.56 | \$ 17,347.73 | \$ 45,281.30 |
| Eastern Branch (Schedules E, F, G, H) | 70,123.10 | 67,500.76 | 2,622.34 | ..... | ..... | ..... |
| Experiment Station (Schedules E, F, G, H) | 391,372.02 | 367,249.69 | 24,122.33 | ..... | ..... | ..... |
| Extension Service (Schedules E, F, G, H) | 500,879.08 | 495,189.62 | 3,089.46 | ..... | Payment of Loan | 2,600.00 |
| Total Exp. 1926-1928 | \$2,823,069.95 | \$2,382,130.87 | \$ 124,603.49 | \$ 251,106.56 | \$ 17,347.73 | \$ 47,881.30 |

STATEMENT OF RECEIPTS AND EXPENDITURES BY FUNDS FOR THE BIENNIUM 1926-1928

| | Balance October 1, 1926 | Income for the Biennium | Net Total Receipts for Biennium | Total Expenditures Biennium | Balance September 30, 1928 |
|--------------------------------------|-------------------------------|-------------------------------|---------------------------------------|-----------------------------------|----------------------------------|
| GENERAL UNIVERSITY: | | | | | |
| <i>Instructional Funds</i> | —\$82,675.00 | \$1,549,621.33 | \$1,466,946.33 | \$1,537,264.58 | —\$70,318.25 |
| <i>Revolving Funds:</i> | | | | | |
| Students' Supply Store | 13,018.30 | 70,940.52 | 83,958.82 | *75,402.46 | 8,556.36 |
| University Press | —5,018.08 | 15,783.65 | 10,765.57 | 13,903.39 | —3,137.82 |
| University Storehouse | —800.97 | 14,950.98 | 14,150.01 | 13,867.97 | 282.04 |
| Advanced Registry Testing | 304.61 | 7,909.24 | 8,213.85 | **8,213.85 | ..... |
| Dairy Manufacturing Laboratory | 3,252.77 | 211,047.97 | 214,300.74 | 212,043.50 | 2,257.24 |
| Totals Revolving Funds | \$10,756.63 | \$320,132.36 | \$331,388.99 | \$323,431.17 | \$7,957.82 |
| <i>State Working Fund</i> | 200,000.00 | ..... | 200,000.00 | ..... | 200,000.00 |
| Totals—General University | \$128,081.63 | \$1,870,253.69 | \$1,998,335.32 | \$1,860,695.75 | \$137,639.57 |
| EASTERN BRANCH: | | | | | |
| State Fund ..... | ..... | \$41,240.00 | \$41,240.00 | \$41,240.00 | ..... |
| Federal Fund | \$7,745.02 | 20,000.00 | 27,745.02 | 20,245.01 | \$7,500.01 |
| General Receipt Fund | —46.50 | 8,959.56 | 8,913.06 | 8,638.09 | 274.97 |
| Totals—Eastern Branch | \$7,698.52 | \$70,199.56 | \$77,898.08 | \$70,123.10 | \$7,774.98 |
| EXPERIMENT STATION: | | | | | |
| State Fund for Research ..... | ..... | \$133,800.00 | \$133,800.00 | \$133,800.00 | ..... |
| Biological Laboratory ..... | ..... | 11,000.00 | 11,000.00 | 11,000.00 | ..... |
| †Seed Inspection ..... | ..... | 17,900.00 | 17,900.00 | 17,900.00 | ..... |
| Ridgely Farm ..... | ..... | 10,000.00 | 10,000.00 | 10,000.00 | ..... |
| †State Dairymen's Association ..... | ..... | 5,000.00 | 5,000.00 | ***5,000.00 | ..... |
| Total State Appropriations ..... | ..... | \$177,700.00 | \$177,700.00 | \$177,700.00 | ..... |
| Hatch Fund | \$123.26 | \$30,000.00 | \$30,123.26 | \$30,159.96 | —\$36.70 |
| Adams Fund | 189.66 | 30,000.00 | 30,189.66 | 30,258.01 | —68.35 |
| Purnell Fund | 448.82 | 75,000.00 | 75,448.82 | 74,516.01 | 932.81 |
| Total Federal Appropriations | \$761.74 | \$135,000.00 | \$135,761.74 | \$134,933.98 | \$827.76 |
| Biological Laboratory Sales | —\$2,161.93 | \$16,858.92 | \$14,696.99 | \$17,360.04 | —\$2,663.05 |
| Ridgely Farm Sales | 352.69 | 925.20 | 1,277.89 | 1,235.85 | 42.04 |
| Station Farm Sales | —1,968.49 | 53,879.26 | 51,928.77 | 54,055.22 | —2,126.45 |

STATEMENT OF RECEIPTS AND EXPENDITURES BY FUNDS FOR THE BIENNIUM 1926-1928—(Cont'd)

| Forward. | Balance October 1, 1926 | Income for the Biennium | Net Total Receipts for Biennium | Total Expenditures Biennium | Balance September 30, 1928 |
|--|-------------------------------|-------------------------------|---------------------------------------|-----------------------------------|----------------------------------|
| Fellowship Funds..... | 960.43 | 6,900.00 | 7,860.43 | 5,801.91 | 2,058.52 |
| James Todd Trust Fund..... | 285.02 | ..... | 285.02 | 285.02 | ..... |
| Total Other Sources..... | —\$2,532.28 | \$78,581.38 | \$76,049.10 | \$78,738.04 | —\$2,688.94 |
| Totals Experiment Station..... | —\$1,770.54 | \$391,281.38 | \$389,510.84 | \$391,372.02 | —\$1,861.18 |
| EXTENSION SERVICE: | | | | | |
| State Smith-Lever..... | ..... | \$92,574.22 | \$92,574.22 | \$92,574.22 | ..... |
| County Demonstration..... | ..... | 110,000.00 | 110,000.00 | 110,000.00 | ..... |
| General Extension..... | ..... | 30,000.00 | 30,000.00 | 30,000.00 | ..... |
| †State Horticultural Department..... | ..... | 25,120.00 | 25,120.00 | 25,120.00 | ..... |
| Marketing Extension..... | ..... | 20,000.00 | 20,000.00 | 20,000.00 | ..... |
| Canning Extension..... | ..... | 10,000.00 | 10,000.00 | 10,000.00 | ..... |
| Mining Extension..... | ..... | 2,100.00 | 2,100.00 | 2,100.00 | † |
| †Insect Control..... | ..... | 10,000.00 | 10,000.00 | 10,000.00 | ..... |
| Totals State Appropriations..... | ..... | \$299,794.22 | \$299,794.22 | \$299,794.22 | ..... |
| Federal Smith-Lever..... | \$18,854.88 | \$112,574.22 | \$131,429.10 | \$112,074.84 | \$19,354.26 |
| Federal Smith-Lever Supplementary..... | 2,859.79 | 30,905.29 | 33,765.08 | 29,828.00 | 3,937.08 |
| Capper-Ketcham..... | ..... | 10,000.00 | 10,000.00 | 1,897.48 | 8,102.52 |
| Mining Extension..... | ..... | 1,440.00 | 1,440.00 | 1,920.00 | —†480.00 |
| Totals Federal Appropriations..... | \$21,714.67 | \$154,919.51 | \$176,634.18 | \$145,720.32 | \$30,913.86 |
| General Extension Receipts..... | ..... | \$42,246.45 | \$42,941.77 | \$41,369.56 | \$1,572.21 |
| Advanced Registry Testing..... | ..... | 7,614.06 | 7,614.06 | **7,860.44 | —246.38 |
| †Insect Control Loan..... | ..... | 2,600.00 | 2,600.00 | 6,134.54 | —\$3,534.54 |
| Totals Other Sources..... | \$695.32 | \$52,460.51 | \$53,155.83 | \$55,364.54 | —\$2,208.71 |
| Totals Extension Service..... | \$22,409.99 | \$507,174.24 | \$529,584.23 | \$500,879.08 | \$28,705.15 |
| Grand Totals—All Departments..... | \$156,419.60 | \$2,838,908.87 | \$2,995,328.47 | \$2,823,069.95 | \$172,258.52 |

†Public Service and Regulatory Funds.

**During the biennium \$7,000 were transferred from Student Supply Store Earnings to the Educational Funds.

***Advanced Registry Funds were transferred from General University to Extension Service in January, 1928.

***State Dairymen's Association Fund was transferred from General University to Experiment Station October 1, 1928.

†Mining Extension Fund was transferred from General University to Extension Service October 1, 1928.

‡Overdraft permitted by the Governor pending appropriation for Japanese Beetle control.

DETAILS OF INCOME FOR THE YEAR 1926-1927

SCHEDULE C

| | Total Income 1926-1927 | SOURCES OF INCOME | | | Revolving Funds |
|--|------------------------------|-------------------|-----------------|-----------------|--------------------|
| | | State Appro. | U. S. Appro. | Student Fees |  | Other Sources |
| GENERAL UNIVERSITY: | | | | | |
| From State Treasurer: | | | | | |
| State Appropriation for Maintenance | \$227,195.45 | \$227,195.45 | | | |
| State Appropriation for Deficiency in Interest | 2,047.44 | 2,047.44 | | | |
| Interest on Land Grant Funds | 4,784.49 | | | | 4,784.49 |
| From U. S. Treasurer: | | | | | |
| Morrill-Nelson Fund | \$234,027.38 | \$229,242.89 | | | 4,784.49 |
| Smith-Hughes Fund | \$40,000.00 | | \$40,000.00 | | |
| | 8,081.36 | | 8,081.36 | | |
| From Students: | | | | | |
| Fees—4-Year Students | \$48,081.36 | | \$48,081.36 | | |
| Fees—Short Course Students | \$291,243.91 | | | \$291,243.91 | |
| Fees—Summer School Students | 737.00 | | | 737.00 | |
| | 22,169.12 | | | 22,169.12 | |
| | \$314,150.03 | | | \$314,150.03 | |
| From Miscellaneous Sales: | | | | | |
| Door Receipts, Dining Hall | \$8,582.64 | | | | 8,582.64 |
| Farm Garden and Greenhouse | 1,316.22 | | | | 1,316.22 |
| Misc. Sales, Carboys, etc..... | 513.20 | | | | 513.20 |
| | \$10,412.06 | | | | \$10,412.06 |

DETAILS OF INCOME FOR THE YEAR 1926-1927—Continued

SCHEDULE C

GENERAL UNIVERSITY—

Continued
From Reimbursements for
Services, Etc.:

| | Total Income 1926-1927 | SOURCES OF INCOME | | | Other Sources | Revolving Funds |
|---|------------------------------|-------------------|-----------------|-----------------|------------------|--------------------|
| | | State Appro. | U. S. Appro. | Student Fees | | |
| Baltimore Schools for Sal- aries, etc. | \$25,596.03 | | | | \$25,596.03 | |
| Chemical Foundation for Salary | 7,500.00 | | | | 7,500.00 | |
| U. S. Ind. Chemical Co. | 1,000.00 | | | | 1,000.00 | |
| Eli Lilly Co. for Fellow- ships | 2,400.00 | | | | 2,400.00 | |
| State Roads Commission | 2,187.50 | | | | 2,187.50 | |
| E. I. DuPont de Nemours Co. | 750.00 | | | | 750.00 | |
| U. S. War Department for Uniforms | 1,373.28 | | | | 1,373.28 | |
| Extension Service for Overhead | 3,100.00 | | | | 3,100.00 | |
| Student Supply Store for Overhead | 1,000.00 | | | | 1,000.00 | |
| Dept. Transfers to Library | 975.89 | | | | 975.89 | |
| | \$45,882.70 | | | | \$45,882.70 | |
| From Miscellaneous Sources: | | | | | | |
| General Service: | | | | | | |
| From Depts. for Repairs | \$828.88 | | | | \$828.88 | |
| Telephone Calls | 391.84 | | | | 391.84 | |
| Truck Supplies | 974.11 | | | | 974.11 | |
| Freight and Express Re- funds | 88.98 | | | | 88.98 | |
| Ice Sales | 361.88 | | | | 361.88 | |

DETAILS OF INCOME FOR THE YEAR 1926-1927—Continued

SCHEDULE C

GENERAL UNIVERSITY— Continued From Miscellaneous Sources—

| | Total Income 1926-1927 | SOURCES OF INCOME | | | Other Sources | Revolving Funds |
|----------------------------------|------------------------------|-------------------|-----------------|-----------------|------------------|--------------------|
| | | State Appro. | U. S. Appro. | Student Fees | | |
| Coal Sales | \$1,330.82 | ..... | ..... | ..... | \$1,330.82 | ..... |
| Electric Current | 2,000.48 | ..... | ..... | ..... | 2,000.48 | ..... |
| Water Supply | 494.43 | ..... | ..... | ..... | 494.43 | ..... |
| Gas Refunds | 101.60 | ..... | ..... | ..... | 101.60 | ..... |
| Miscellaneous | 103.79 | ..... | ..... | ..... | 103.79 | ..... |
| Tickets Music Festival | 234.00 | ..... | ..... | ..... | 234.00 | ..... |
| Fees for Cashing Checks | 399.60 | ..... | ..... | ..... | 399.60 | ..... |
| Transfer of Old Account ..... |  | ..... | ..... | ..... |  | ..... |
| Union Trust Co. | 1,298.75 | ..... | ..... | ..... | 1,298.75 | ..... |
| Rent of Goddard House | 143.66 | ..... | ..... | ..... | 143.66 | ..... |
| Barber Shop Commissions | 130.01 | ..... | ..... | ..... | 130.01 | ..... |
| Interest on Deposits | 1,401.05 | ..... | ..... | ..... | 1,401.05 | ..... |
| Miscellaneous | 118.56 | ..... | ..... | ..... | 118.56 | ..... |
| Interest on Bonds | 25.51 | ..... | ..... | ..... | 25.51 | ..... |
| Uncalled for Key Deposits | 64.75 | ..... | ..... | ..... | 64.75 | ..... |
| Miscellaneous Refunds, etc. | 72.40 | ..... | ..... | ..... | 72.40 | ..... |
| Credit by Cancelled Checks | 546.96 | ..... | ..... | ..... | 546.96 | ..... |
| | \$11,112.06 | ..... | ..... | ..... | 11,112.06 | ..... |

Insurance Receipts:

| | | | | | | |
|------------------------------|-------------------|-------|-------|-------|-------------------|-------|
| Payments Account Group | | | | | | |
| Insurance | \$4,194.57 | ..... | ..... | ..... | \$4,194.57 | ..... |
| Rebates Fire Insurance | 299.24 | ..... | ..... | ..... | 299.24 | ..... |
| | \$4,493.81 | ..... | ..... | ..... | \$4,493.81 | ..... |

DETAILS OF INCOME FOR THE YEAR 1926-1927—Continued

SCHEDULE C

| GENERAL UNIVERSITY— Continued | Total Income 1926-1927 | SOURCES OF INCOME | | | | Revolving Funds |
|--|------------------------------|-------------------|-----------------|-----------------|------------------|--------------------|
| | | State Appro. | U. S. Appro. | Student Fees | Other Sources | |
| <i>Fertilizer, Lime and Feed Li- censes and Tonnage Fees...</i> | \$47,967.14 | ..... | ..... | ..... | \$47,967.14 | ..... |
| <i>Special Equipment Funds:</i> | | | | | | |
| For Dunning Laboratory..... | \$1,668.00 | ..... | ..... | ..... | \$1,668.00 | ..... |
| For Wiley Laboratory..... | 400.00 | ..... | ..... | ..... | 400.00 | ..... |
| For Turner Laboratory..... | 5,000.00 | ..... | ..... | ..... | 5,000.00 | ..... |
| | \$7,068.00 | ..... | ..... | ..... | \$7,068.00 | ..... |
| <i>Non-Educational Funds Han- dled Through the Gen- eral University:</i> | | | | | | |
| State Board of Agriculture Executive Expenses..... | \$5,000.00 | \$5,000.00 | ..... | ..... | ..... | ..... |
| State Dairymen's Associa- tion..... | 5,000.00 | 5,000.00 | ..... | ..... | ..... | ..... |
| Mining Extension..... | 4,200.00 | 2,100.00 | \$2,100.00 | ..... | ..... | ..... |
| | \$14,200.00 | \$12,100.00 | \$2,100.00 | ..... | ..... | ..... |
| <i>Revolving Funds:</i> | | | | | | |
| Student Supply Store..... | \$38,649.55 | ..... | ..... | ..... | ..... | \$38,649.55 |
| University Press..... | 7,510.01 | ..... | ..... | ..... | ..... | 7,510.01 |
| University Storehouse..... | 6,566.22 | ..... | ..... | ..... | ..... | 6,566.22 |
| Dairy Mfg. Laboratory..... | 115,300.46 | ..... | ..... | ..... | ..... | 115,300.46 |
| Advanced Registry Testing..... | 5,620.00 | ..... | ..... | ..... | ..... | 5,620.00 |
| | \$173,646.24 | ..... | ..... | ..... | ..... | \$173,646.24 |
| Total Income General Univer- sity, 1926-27..... | \$911,040.78 | \$241,342.89 | \$50,181.36 | \$314,150.03 | \$131,720.26 | \$173,646.24 |

DETAILS OF INCOME FOR THE YEAR 1926-1927—Continued

SCHEDULE C

| | Total Income 1926-1927 | State Appro. | SOURCES OF INCOME— U. S. Appro. | Student Fees | Other Sources |
|---|------------------------------|--------------------|---------------------------------------|-------------------|--------------------|
| EASTERN BRANCH—Princess Anne: | | | | | |
| State Appropriation for Maintenance..... | \$18,120.00 | \$18,120.00 | | | |
| U. S. Appro. Morrill-Nelson Fund..... | 10,000.90 | | \$10,000.00 | | |
| Student Fees..... | 3,732.69 | | | \$3,732.69 | |
| Sales from Farm and Shops..... | 1,305.86 | | | | \$1,305.86 |
| Interest on Deposits..... | 78.95 | | | | 78.95 |
| Total Income Eastern Branch..... | \$33,237.50 | \$18,120.00 | \$10,000.00 | \$3,732.69 | \$1,384.81 |
| EXPERIMENT STATION: | | | | | |
| State Fund for Research..... | \$66,900.00 | \$66,900.00 | | | |
| Biological Laboratory..... | 14,537.44 | 5,500.00 | | | \$9,037.44 |
| Seed Inspection..... | 8,200.00 | 8,200.00 | | | |
| Hatch Fund..... | 15,000.00 | | \$15,000.00 | | |
| Adams Fund..... | 15,000.00 | | 15,000.00 | | |
| Purnell Fund..... | 32,500.00 | | 32,500.00 | | |
| Station Farm Fund..... | 27,013.11 | | | | 27,013.11 |
| Fellowship Funds: | | | | | |
| Soil Improvement Committee..... | \$1,875.00 | | | | |
| Gelfand Mfg. Co..... | 600.00 | | | | |
| McCormick & Co..... | 300.00 | | | | |
| Ridgely Farm Sub-Station: | | | | | 2,775.00 |
| State Appro..... | \$5,000.00 | | | | |
| Sale of Farm Products..... | 406.49 | 5,000.00 | | | 406.49 |
| Total Income Experiment Station..... | \$187,332.04 | \$85,600.00 | \$62,500.00 | | \$39,232.04 |

DETAILS OF INCOME FOR THE YEAR 1926-1927—Continued

SCHEDULE C

| | Total Income 1926-1927 | SOURCES OF INCOME | | |
|---|------------------------------|-------------------|--------------------------|------------------|
| | | State Appro. | U. S. Student Fees | Other Sources |
| EXTENSION SERVICE: | | | | |
| State Smith-Lever | \$46,287.11 | \$46,287.11 | | |
| County Demonstration | 50,000.00 | 50,000.00 | | |
| General Extension | 38,573.21 | 15,000.00 | | *\$23,573.21 |
| Marketing Extension | 10,000.00 | 10,000.00 | | |
| Federal Smith-Lever | 56,287.11 | | \$56,287.11 | |
| Federal Smith-Lever Supplementary | 14,676.40 | | 14,676.40 | |
| State Horticultural Dept. | 12,560.00 | 12,560.00 | | |
| Loan from Insect Control | 2,600.00 | | | 2,600.00 |
| Total Income Extension Service | \$230,983.83 | \$133,847.11 | \$70,963.51 | \$26,173.21 |

| | Total Income 1926-1927 | SOURCES OF INCOME | | |
|-------------------------------|------------------------------|-------------------|--------------------------|------------------|
| | | State Appro. | U. S. Student Fees | Other Sources |
| Summary of Income: | | | | |
| General University | \$911,040.78 | \$241,342.89 | \$50,181.36 | \$131,720.26 |
| Eastern Branch | 33,237.50 | 18,120.00 | 10,000.00 | 1,384.81 |
| Experiment Station | 187,332.04 | 85,600.00 | 62,500.00 | 39,232.04 |
| Extension Service | 230,983.83 | 133,847.11 | 70,963.51 | 26,173.21 |
| Total Income, 1926-1927 | \$1,362,594.15 | \$478,910.00 | \$317,882.72 | \$173,646.24 |

DETAILS OF INCOME FOR THE YEAR 1927-1928

| | SCHEDULE D | | | | | SOURCES OF INCOME | |
|--|------------------------------|-----------------|-----------------|-----------------|------------------|--------------------|--|
| | Total Income 1927-1928 | State Appro. | U. S. Appro. | Student Fees | Other Sources | Revolving Funds | |
| GENERAL UNIVERSITY: | | | | | | | |
| <i>From State Treasurer:</i> | | | | | | | |
| State Appropriation for Maintenance | \$266,000.00 | \$266,000.00 | | | | | |
| State Appropriation for Deficiency in Interest..... | 2,047.44 | 2,047.44 | | | | | |
| Interest on Land Grant Funds | 4,784.49 | | | | \$4,784.49 | | |
| | | | | | | | |
| <i>From U. S. Treasurer:</i> | | | | | | | |
| Morrill-Nelson Fund | \$40,000.00 | | \$40,000.00 | | \$4,784.49 | | |
| Smith-Hughes Fund | 9,343.88 | | 9,343.88 | | | | |
| | | | | | | | |
| <i>From Students:</i> | | | | | | | |
| Fees—4-Year Students..... | \$332,068.48 | | | \$332,068.48 | | | |
| Fees—Short Course Students | 493.00 | | | 493.00 | | | |
| Fees—Summer School Students | 25,046.80 | | | 25,046.80 | | | |
| | | | | | | | |
| | \$357,608.28 | | | \$357,608.28 | | | |
| | | | | | | | |
| <i>From Miscellaneous Sales:</i> | | | | | | | |
| Door Receipts, Dining Hall Greenhouse and Gardens..... | \$18,420.35 | | | | \$18,420.35 | | |
| Sale of Old Equipment..... | 1,282.45 | | | | 1,282.45 | | |
| Miscellaneous Sales, Carboys, etc..... | 352.50 | | | | 352.50 | | |
| | 145.00 | | | | 145.00 | | |
| | | | | | | | |
| | \$20,200.30 | | | | \$20,200.30 | | |

DETAILS OF INCOME FOR THE YEAR 1927-1928—Continued

SCHEDULE D

| GENERAL UNIVERSITY— <i>Continued</i> <i>Reimbursements for Service, Etc.:</i> | Total Income 1927-1928 | SOURCES OF INCOME | | | Revolving Funds |
|---|------------------------------|-------------------|-----------------|-----------------|--------------------|
| | | State Appro. | U. S. Appro. | Student Fees | |
| Baltimore Schools for Sal- aries | \$24,400.00 | ..... | ..... | ..... | ..... |
| Chemical Foundation | 5,625.00 | ..... | ..... | ..... | ..... |
| State Roads Commission | 875.00 | ..... | ..... | ..... | ..... |
| U. S. Ind. Alcohol Co. | 500.00 | ..... | ..... | ..... | ..... |
| Extension Service for Overhead | 4,100.00 | ..... | ..... | ..... | ..... |
| Dept. Reimb. to Library | 912.48 | ..... | ..... | ..... | ..... |
| Association of Land Grant Colleges | 42.74 | ..... | ..... | ..... | ..... |
| U. S. War Dept. for Uni- forms | 1,325.80 | ..... | ..... | ..... | ..... |
| | \$37,781.02 | ..... | ..... | ..... | ..... |
| <i>Miscellaneous Receipts:</i> | | | | | |
| General Service: | | | | | |
| Payments from Depts. for Repairs | \$1,654.24 | ..... | ..... | ..... | ..... |
| Telephone and Telegraph | 383.02 | ..... | ..... | ..... | ..... |
| Truck Supplies | 1,148.78 | ..... | ..... | ..... | ..... |
| Freight and Express | 3.49 | ..... | ..... | ..... | ..... |
| Ice | 311.59 | ..... | ..... | ..... | ..... |
| Coal and Freight on Same | 1,523.89 | ..... | ..... | ..... | ..... |
| Electric Current | 1,867.00 | ..... | ..... | ..... | ..... |
| Water Supply | 909.25 | ..... | ..... | ..... | ..... |
| Lavatory Supplies | 55.30 | ..... | ..... | ..... | ..... |
| Janitorial Supplies | 144.24 | ..... | ..... | ..... | ..... |
| Misc. Gen. Service | 141.22 | ..... | ..... | ..... | ..... |
| <i>Forward</i> | | | | | |

DETAILS OF INCOME FOR THE YEAR 1927-1928—Continued

| GENERAL UNIVERSITY — <i>(Continued)</i> <i>Miscellaneous Receipts—Continued</i> | Total Income 1927-1928 | SCHEDULE D | | | SOURCES OF INCOME | | Other Sources | Revolving Funds |
|---|------------------------------|-----------------|-----------------|-----------------|-------------------|-------|------------------|--------------------|
| | | State Appro. | U. S. Appro. | Student Fees | | | | |
| Refund for Cement Bags | \$93.15 | ..... | ..... | ..... | ..... | ..... | \$93.15 | ..... |
| Fees for Cashing Checks | 430.05 | ..... | ..... | ..... | ..... | ..... | 430.05 | ..... |
| Rent of Goddard Property | 175.65 | ..... | ..... | ..... | ..... | ..... | 175.65 | ..... |
| Interest on Deposits | 1,320.43 | ..... | ..... | ..... | ..... | ..... | 1,320.43 | ..... |
| Interest on Bonds | 16.97 | ..... | ..... | ..... | ..... | ..... | 16.97 | ..... |
| Fees for Use of Palms | 60.00 | ..... | ..... | ..... | ..... | ..... | 60.00 | ..... |
| Refund Account of Overcharges | 121.38 | ..... | ..... | ..... | ..... | ..... | 121.38 | ..... |
| Reimb. Building Fund | 2,000.00 | ..... | ..... | ..... | ..... | ..... | 2,000.00 | ..... |
| Music Festival Receipts | 271.50 | ..... | ..... | ..... | ..... | ..... | 271.50 | ..... |
| Travel and Miscellaneous Refunds | 14.04 | ..... | ..... | ..... | ..... | ..... | 14.04 | ..... |
| Interest on Student Notes | 7.35 | ..... | ..... | ..... | ..... | ..... | 7.35 | ..... |
| Rent of Dormitories | 189.25 | ..... | ..... | ..... | ..... | ..... | 189.25 | ..... |
| Sale of Railroad Tickets to Baltimore | 138.70 | ..... | ..... | ..... | ..... | ..... | 138.70 | ..... |
| Miscellaneous Receipts | 69.90 | ..... | ..... | ..... | ..... | ..... | 69.90 | ..... |
| Credit by Cancelled Checks | 161.54 | ..... | ..... | ..... | ..... | ..... | 161.54 | ..... |
| | \$13,212.33 | ..... | ..... | ..... | ..... | ..... | \$13,212.33 | ..... |
| <i>Insurance Receipts:</i> | | | | | | | | |
| Payments Account Group Insurance | \$5,135.65 | ..... | ..... | ..... | ..... | ..... | \$5,135.65 | ..... |
| Rebates Fire Insurance | 1,138.20 | ..... | ..... | ..... | ..... | ..... | 1,138.20 | ..... |
| | \$6,273.85 | ..... | ..... | ..... | ..... | ..... | \$6,273.85 | ..... |

DETAILS OF INCOME FOR THE YEAR 1927-1928—Continued

SCHEDULE D

| GENERAL UNIVERSITY— Continued | Total Income 1927-1928 | SOURCES OF INCOME | | | | Revolving Funds |
|---|------------------------------|-------------------|-----------------|-----------------|------------------|--------------------|
| | | State Appro. | U. S. Appro. | Student Fees | Other Sources | |
| <i>Fertilizer, Feed and Lime Li- censes and Tonnage Fees.....</i> | \$51,407.20 | ..... | ..... | ..... | \$51,407.20 | ..... |
| <i>Special Equipment Fund:</i> | | | | | | |
| For Dunning Laboratory..... | \$1,668.00 | ..... | ..... | ..... | \$1,668.00 | ..... |
| For Wiley Laboratory..... | 400.00 | ..... | ..... | ..... | 400.00 | ..... |
| For Chemical Alumni Lab- oratory..... | 1,000.00 | ..... | ..... | ..... | 1,000.00 | ..... |
| <i>Endowment Fund:</i> | | | | | | |
| Class of 1908..... | \$3,068.00 | ..... | ..... | ..... | \$3,068.00 | ..... |
| | \$1,000.00 | ..... | ..... | ..... | \$1,000.00 | ..... |
| Sub-Totals..... | \$812,726.79 | \$268,047.44 | \$49,343.88 | \$357,608.28 | \$137,727.19 | ..... |
| <i>Revolving Funds:</i> | | | | | | |
| Students' Supply Store..... | \$32,290.97 | ..... | ..... | ..... | ..... | \$32,290.97 |
| University Press..... | 8,273.64 | ..... | ..... | ..... | ..... | 8,273.64 |
| University Storehouse..... | 8,384.76 | ..... | ..... | ..... | ..... | 8,384.76 |
| Dairy Mfg. Laboratory..... | 95,247.51 | ..... | ..... | ..... | ..... | 95,247.51 |
| Advanced Registry Testing..... | 2,289.24 | ..... | ..... | ..... | ..... | 2,289.24 |
| | \$146,486.12 | ..... | ..... | ..... | ..... | \$146,486.12 |
| Total Income General Uni- versity..... | \$959,212.91 | \$268,047.44 | \$49,343.88 | \$357,608.28 | \$137,727.19 | \$146,486.12 |

DETAILS OF INCOME FOR THE YEAR 1927-1928—Continued

SCHEDULE D

| | Total Income 1927-1928 | State Appro. | SOURCES OF INCOME U. S. Appro. | Student Fees | Other Sources |
|--|------------------------------|--------------------|--------------------------------------|-------------------|--------------------|
| EASTERN BRANCH—Princess Anne: | | | | | |
| State Appro. for Maintenance..... | \$23,120.00 | \$23,120.00 | | | |
| Morrill-Nelson Fund..... | 10,000.00 | | 10,000.00 | | |
| Student Fees..... | 2,231.00 | | | 2,231.00 | |
| Sales from Shops and Farm..... | 1,534.78 | | | | 1,534.73 |
| Interest on Deposits..... | 76.28 | | | | 76.23 |
| Totals—Eastern Branch Income..... | \$36,962.06 | \$23,120.00 | \$10,000.00 | \$2,231.00 | \$1,611.06 |
| EXPERIMENT STATION: | | | | | |
| State Fund for Research..... | \$66,900.00 | \$66,900.00 | | | |
| Biological Laboratory..... | 13,321.48 | 5,500.00 | | | \$7,821.48 |
| Seed Inspection..... | 9,700.00 | 9,700.00 | | | |
| Hatch Fund..... | 15,000.00 | | 15,000.00 | | |
| Adams Fund..... | 15,000.00 | | 15,000.00 | | |
| Purnell Fund..... | 42,500.00 | | 42,500.00 | | |
| Station Farm Sales..... | 26,884.15 | | | | 26,884.15 |
| Fellowship Funds: | | | | | |
| Synthetic Nitrogen Project..... | \$1,125.00 | | | | |
| Farm Electricity Project..... | 1,000.00 | | | | |
| Potash Project..... | 2,000.00 | | | | |
| Ridgely Farm Sub-Station..... | 5,518.71 | 5,000.00 | | | 4,125.00 |
| State Dairymen's Association..... | 5,000.00 | 5,000.00 | | | 518.71 |
| Totals Experiment Station Income..... | \$203,949.34 | \$92,100.00 | \$72,500.00 | | \$39,349.34 |

DETAILS OF INCOME FOR THE YEAR 1927-1928—Continued

SCHEDULE D

| | Total Income 1927-1928 | State Appro. | SOURCES OF INCOME U. S. Appro. | Student Fees | Other Sources |
|---------------------------------------|------------------------------|-----------------|--------------------------------------|-----------------|------------------|
| EXTENSION SERVICE: | | | | | |
| State Smith-Lever | \$46,287.11 | \$46,287.11 | | | |
| County Demonstration | 60,000.00 | 60,000.00 | | | |
| General Extension | 33,673.24 | 15,000.00 | | | 18,673.24 |
| State Horticultural Department | 12,560.00 | 12,560.00 | | | |
| Marketing Extension | 10,000.00 | 10,000.00 | | | |
| Canning Extension | 10,000.00 | 10,000.00 | | | |
| Mining Extension | 3,540.00 | 2,100.00 | 1,440.00 | | |
| Federal Smith-Lever | 72,516.00 | | 72,516.00 | | |
| Copper-Ketcham | 10,000.00 | | 10,000.00 | | |
| Insect Control (Emergency Fund) | 10,000.00 | 10,000.00 | | | |
| Advanced Registry Testing | 7,614.06 | | | | 7,614.06 |
| Totals Extension Service | \$294,500.53 | \$165,947.11 | \$83,956.00 | | \$26,287.30 |

DETAILS OF INCOME FOR THE YEAR 1927-1928

SCHEDULE D

| | Total Income 1927-1928 | State Appro. | U. S. Appro. | SOURCES OF INCOME Student Fees | Other Sources | Revolving Funds |
|-------------------------------|------------------------------|-----------------|-----------------|--------------------------------------|------------------|--------------------|
| Summary of Income: | | | | | | |
| General University | \$959,212.91 | \$268,047.44 | \$49,343.88 | \$357,608.28 | \$137,727.19 | \$146,486.12 |
| Eastern Branch | 36,962.06 | 23,120.00 | 10,000.00 | 2,231.00 | 1,611.06 | |
| Experiment Station | 203,949.34 | 92,100.00 | 72,500.00 | | 39,349.34 | |
| Extension Service | 276,190.41 | 165,947.11 | 83,956.00 | | 26,287.30 | |
| Total Income, 1927-1928 | \$1,476,314.72 | \$549,214.55 | \$215,799.88 | \$359,839.28 | \$204,974.89 | \$146,486.12 |

CLASSIFICATION OF EXPENDITURES, 1926-1927

SCHEDULE E

| | General University | Eastern Branch | Experiment Station | Extension Service | Totals 1926-1927 |
|--|-----------------------|-------------------|-----------------------|----------------------|---------------------|
| <i>Operating Expenses:</i> | | | | | |
| Salaries | \$418,991.40 | \$20,812.83 | \$98,722.91 | \$166,477.40 | \$705,004.54 |
| Wages | 105,904.12 | 1,254.36 | 32,492.11 | 11,605.44 | 151,256.03 |
| Chemicals and Laboratory Supplies | 7,453.96 | 158.43 | 1,907.81 | | 9,520.20 |
| Printing and Distribution of Publications | 7,026.35 | | 2,552.70 | 1,673.98 | 11,253.03 |
| Postage, Stationery and Small Printing | 10,925.80 | 196.46 | 821.28 | 5,417.46 | 17,361.00 |
| Traveling Expenses | 8,218.28 | | 6,058.12 | 40,654.27 | 54,930.67 |
| Heat, Light, Power and Water | 23,005.10 | 3,791.20 | 2,992.42 | 1,000.00 | 30,788.72 |
| Telephone and Telegraph | 4,327.53 | 131.56 | 1,082.42 | 2,058.01 | 7,599.52 |
| Freight and Express | 9,371.60 | 1,307.80 | 1,373.32 | 2,302.80 | 14,355.52 |
| Seeds, Plants and Sundry Supplies | 9,865.26 | 3,439.05 | 8,758.71 | | 22,063.02 |
| Insurance—Group and Fire | 9,898.45 | 5.46 | 44.07 | | 9,947.98 |
| Interest on Loans | 752.50 | | | | 752.50 |
| Rent of Property and Equipment | 862.52 | | 2,120.00 | 184.20 | 3,166.72 |
| Association Dues and Bonds | 637.68 | | 41.66 | 36.66 | 716.00 |
| Repairs to Motor Vehicles | 266.18 | 41.95 | | | 308.13 |
| Gasoline and Oil | 1,915.92 | 653.39 | | | 2,569.31 |
| Entertainment of Guests | 89.10 | 181.74 | | | 270.84 |
| Military Uniforms | 1,373.00 | | | | 1,373.00 |
| Cleaning Windows, Rugs, etc., and Laundry Work | 533.78 | | 95.26 | 42.74 | 671.78 |
| Music, Including Festival | 478.09 | | | | 478.09 |
| Y. M. C. A. Support | 500.00 | | | | 500.00 |
| Fees and Licenses for Motor Vehicles | 21.00 | 7.46 | 24.00 | | 52.46 |
| Commencement Expenses | 1,012.37 | | | | 1,012.37 |
| Honorariums, Professional Services, etc. | 450.00 | | | 140.00 | 590.00 |
| Fertilizers | | | 1,982.87 | | 1,982.87 |
| Feeding Stuffs | | | 12,138.36 | | 12,138.36 |
| Meats, Groceries and Supplies for Dining Hall | 88,941.55 | | | | 88,941.55 |
| Laundry Supplies | 487.45 | | | | 487.45 |
| Miscellaneous Expenses | 170.44 | | 50.00 | 2,627.21 | 2,847.65 |
| Total Operating Expenses | \$713,479.43 | \$31,981.69 | \$173,258.02 | \$234,220.17 | \$1,152,939.31 |

CLASSIFICATION OF EXPENDITURES, 1926-1927—Continued

SCHEDULE E

| 1926-1927 | General University | Eastern Branch | Experiment Station | Extension Service | Totals 1926-1927 |
|---|--------------------|----------------|--------------------|-------------------|------------------|
| <i>Forward</i> | \$713,479.43 | \$31,981.69 | \$173,258.02 | \$234,220.17 | \$1,152,939.31 |
| <i>Capital Outlay:</i> | | | | | |
| Scientific Apparatus | \$3,163.04 | ..... | \$1,339.01 | \$33.25 | \$4,535.30 |
| Furniture and Fixtures | 18,041.96 | \$283.94 | 2,547.79 | 626.87 | 21,500.56 |
| Tools and Machinery | 5,831.04 | 753.62 | 5,119.62 | 68.98 | 11,773.26 |
| Library Books | 6,017.21 | ..... | 449.38 | 134.43 | 6,601.02 |
| Live Stock ..... | ..... | ..... | 1,213.89 | ..... | 1,213.89 |
| Total Equipment | \$33,053.25 | \$1,037.56 | \$10,669.69 | \$863.53 | \$45,624.03 |
| Minor Repairs and Alterations | 7,153.05 | 89.45 | 4,020.40 | ..... | 11,262.90 |
| Total Capital Expenses | \$40,206.30 | \$1,127.01 | \$14,690.09 | \$863.53 | \$56,886.93 |
| <i>Stock Purchased for Sale from Revolving Funds:</i> | | | | | |
| Students' Supply Store | \$28,316.82 | ..... | ..... | ..... | \$28,316.82 |
| University Press | 2,774.21 | ..... | ..... | ..... | 2,774.21 |
| University Storehouse | 5,697.51 | ..... | ..... | ..... | 5,697.51 |
| Dairy Manufacturing Laboratory | 100,144.61 | ..... | ..... | ..... | 100,144.61 |
| Total Goods for Resales | \$136,933.15 | ..... | ..... | ..... | \$136,933.15 |
| Refund of Student Fees | 8,343.94 | ..... | ..... | ..... | 8,343.94 |
| Departmental Transfers | 5,468.72 | ..... | ..... | ..... | 5,468.72 |
| Total Classified Expenditures | \$904,431.54 | \$33,108.70 | \$187,948.11 | \$235,083.70 | \$1,360,572.05 |
| Transfer of Fees Collected for the Athletic Association | 15,042.06 | ..... | ..... | ..... | 15,042.06 |
| Total Cash Disbursements, 1926-1927 | \$919,473.60 | \$33,108.70 | \$187,948.11 | \$235,083.70 | \$1,375,614.11 |

CLASSIFICATION OF EXPENDITURES, 1927-1928

SCHEDULE F

| | 1927-1928 | DISTRIBUTION BY MAJOR DEPARTMENTS | | | |
|---|-----------|-----------------------------------|--------------------|----------------|--------------------|
| | | Total Expenditures 1927-1928 | General University | Eastern Branch | Experiment Station |
| Operating Expenses: | | | | | Extension Service |
| Salaries | | \$744,647.59 | \$430,316.02 | \$24,599.31 | \$111,912.70 |
| Wages | | 151,323.84 | 106,898.07 | 1,678.00 | 31,502.93 |
| Chemicals and Laboratory Supplies | | 10,681.46 | 8,350.61 | 391.48 | 1,939.37 |
| Printing and Distribution of Publications | | 10,789.03 | 5,623.76 | | 2,700.67 |
| Postage, Stationery and Small Printing | | 17,112.15 | 10,634.00 | 122.19 | 1,798.26 |
| Traveling Expenses | | 63,343.82 | 9,658.70 | | 1,792.28 |
| Heat, Light, Power and Water | | 34,347.30 | 23,270.03 | 4,521.61 | 6,472.26 |
| Telegraph and Telephone | | 6,332.90 | 4,545.87 | 80.82 | 3,540.66 |
| Freight and Express | | 12,571.49 | 8,408.00 | 866.67 | 486.45 |
| Seeds, Plants and Sundry Supplies | | 26,703.84 | 9,392.61 | 935.58 | 1,611.41 |
| Insurance | | 24,655.35 | 23,903.65 | 129.47 | 7,912.25 |
| Interest | | 2,043.33 | 1,978.33 | | 270.32 |
| Rent of Land and Equipment | | 3,746.40 | 250.90 | 27.50 | 3,211.50 |
| Association Dues and Premiums on Bonds | | 839.57 | 829.57 | | 10.00 |
| Repairs to Motor Vehicles | | 390.87 | 261.67 | 129.20 | |
| Gasoline and Oil | | 2,420.64 | 1,932.34 | 488.30 | |
| Entertainment of Guests | | 1,563.64 | 1,563.64 | | |
| Military Uniforms | | 1,332.73 | 1,332.73 | | |
| Cleaning Windows, Rugs, etc. | | 974.07 | 867.20 | | 106.87 |
| Music, Including Music Festival | | 1,143.06 | 1,143.06 | | |
| Fees and Licenses for Automobiles | | 38.50 | 17.50 | | 21.00 |
| Commencement Expenses | | 877.05 | 877.05 | | |
| Honorariums and Special Services | | 300.00 | 300.00 | | |
| Fertilizers | | 2,781.85 | | 277.00 | 2,504.85 |
| Feeding Stuffs | | 17,171.37 | 625.69 | 874.28 | 15,671.40 |
| Meats, Groceries and Other Dining Hall Supplies | | 80,246.39 | 80,246.39 | | |
| Laundry Supplies | | 241.52 | 241.52 | | |

CLASSIFICATION OF EXPENDITURES, 1927-1928—Continued

SCHEDULE F

| 1927-1928 <i>Operating Expenses—Continued</i> | Total Expenditures 1927-1928 | DISTRIBUTION BY MAJOR DEPARTMENTS | | | |
|--|------------------------------------|-----------------------------------|-------------------|-----------------------|----------------------|
| | | General University | Eastern Branch | Experiment Station | Extension Service |
| Newspapers for Bureau of Information | 389.30 | 389.30 | | | |
| Taxes | 162.93 | 149.43 | | 13.50 | |
| Miscellaneous | 719.42 | 363.00 | | | 356.42 |
| Minor Repairs and Alterations | 7,043.64 | 4,340.73 | 397.66 | 2,305.25 | |
| Inspection of Fruits and Vegetables | 2,256.51 | | | | 2,256.51 |
| Total Operating Expenses | \$1,229,191.56 | \$738,711.37 | \$35,519.07 | \$193,991.67 | \$260,969.45 |
| <i>Capital Expenditures:</i> | | | | | |
| Scientific Apparatus | \$5,982.38 | \$4,029.85 | \$80.25 | \$1,786.55 | \$85.73 |
| Furniture, Fixtures and Laboratory Equipment | 33,044.62 | 29,208.80 | 599.19 | 2,096.17 | 1,140.46 |
| Tools and Machinery | 12,076.07 | 7,349.58 | 340.89 | 3,600.97 | 784.63 |
| Library Books | 7,321.44 | 6,631.73 | | 474.60 | 215.11 |
| Live Stock | 2,348.95 | 400.00 | 475.00 | 1,473.95 | |
| Total Equipment | \$60,773.46 | \$47,619.96 | \$1,495.33 | \$9,432.24 | \$2,225.93 |
| <i>Improvements and Additions:</i> | | | | | |
| Balance on New Dining Hall | \$3,073.94 | \$3,073.94 | | | |
| Balance on New Chemistry Building | 422.50 | 422.50 | | | |
| Campus Improvements | 446.66 | 446.66 | | | |
| Water and Sewer Lines | 3,000.00 | 3,000.00 | | | |
| Total Net Capital Expenditures from Oper- ating Funds | \$67,716.56 | \$54,563.06 | \$1,495.33 | \$9,432.24 | \$2,225.93 |

CLASSIFICATION OF EXPENDITURES, 1927-1928—Continued

SCHEDULE F

| | Total Expenditures 1927-1928 | DISTRIBUTION BY MAJOR DEPARTMENTS | | |
|---|------------------------------------|-----------------------------------|-------------------|---|
| | | General University | Eastern Branch | Experiment Station Extension Service |
| 1927-1928 | | | | |
| <i>Departmental Transfers, Etc.:</i> | | | | |
| Transfer of Fees Collected for Athletic Board | \$15,772.27 | \$15,772.27 | | |
| Transfers Between Departments | 5,622.16 | 5,622.16 | | |
| Transfer from Univ. to Adv. Reg. Funds | 2,350.00 | 5,622.16 | | |
| Transfer of Bal. Univ. to Adv. Reg. F'ds. | 213.09 | 2,350.00 | | |
| Transfer from Univ. to Mining Extension | 480.00 | 213.09 | | |
| Transfer of Petty Cash to Dairy Lab'y | 300.00 | 480.00 | | |
| Old Over and Short Item Charged Off | 30.00 | 30.00 | | |
| Cancelled Check Reinstated | 3.00 | 3.00 | | |
| Total Departmental Transfers, etc. | \$24,770.52 | \$24,770.52 | | |
| <i>Student Refunds</i> | \$9,003.79 | \$9,003.79 | | \$2,600.00 |
| <i>Payment of Loan for Insect Control</i> | \$2,600.00 | | | |
| <i>Revolving Funds:</i> | | | | |
| Student Supply Store | \$30,146.13 | \$30,146.13 | | |
| University Press | 2,875.96 | 2,875.96 | | |
| University Storehouse | 8,170.46 | 8,170.46 | | |
| Dairy Manufacturing Laboratory | 72,980.86 | 72,980.86 | | |
| Total Stock Purchased for Sale | \$114,173.41 | \$114,173.41 | | |
| Total Cash Disbursements, 1927-1928 | \$1,447,455.84 | \$941,222.15 | \$37,014.40 | \$265,795.38 |

STATEMENT OF EXPENDITURES BY DEPARTMENTS, 1926-1927

SCHEDULE G

| GENERAL UNIVERSITY— | | | |
|--|------------------------------|------------------------|---------------------------------|
| <i>Administration:</i> | | | |
| Office of the President, Assistant to President and Business Office | Total Expenditures 1926-1927 | For Salaries and Wages | For Supplies and Other Expenses |
| <i>Registrar</i> | \$33,424.85 | \$31,362.93 | \$2,061.92 |
| <i>Dean of Women</i> | 7,164.46 | 6,209.98 | 954.48 |
| <i>The Library</i> | 3,133.70 | 2,874.62 | 259.08 |
| <i>Bureau of Information</i> | 12,700.29 | 6,852.75 | 5,847.54 |
| <i>General Service:</i> | 9,983.55 | 2,885.20 | 7,098.35 |
| Department of Buildings and Grounds | 59,721.02 | 24,421.48 | 35,299.54 |
| Janitorial Department | 11,775.73 | 10,312.16 | 1,463.57 |
| Heating Plant | 26,237.96 | 10,411.88 | 15,826.08 |
| <i>Purchasing, Mail and Transportation:</i> | | | |
| Purchasing Office, Post Office, Freight and Express, Bus Service and Military Stores | 11,674.34 | 9,790.00 | 1,884.34 |
| <i>Miscellaneous Overhead:</i> | | | |
| Group Insurance | 8,924.24 | ..... | 8,924.24 |
| Fire Insurance | 984.21 | ..... | 984.21 |
| Commencement | 1,345.02 | ..... | 1,345.02 |
| Travel for General Purposes | 190.64 | ..... | 190.64 |
| Expenses of Debating Teams | 240.48 | ..... | 240.48 |
| Entertainment of Guests | 64.80 | ..... | 64.80 |
| General Music Expense | 1,636.86 | 700.00 | 936.86 |
| Departmental Postage | 680.00 | ..... | 680.00 |
| Association Dues | 414.18 | ..... | 414.18 |
| Premiums on Bonds | 175.00 | ..... | 175.00 |
| Y. M. C. A. Support | 500.00 | ..... | 500.00 |
| Field Agent | 1,050.00 | 1,050.00 | ..... |
| Interest on Loans | 1,002.50 | ..... | 1,002.50 |
| General Equipment | 2,621.68 | ..... | 2,621.68 |
| Miscellaneous Expense | 41.49 | ..... | 41.49 |
| Totals General Overhead Expenses | \$195,687.00 | \$106,871.00 | \$88,816.00 |

STATEMENT OF EXPENDITURES BY DEPARTMENTS, 1926-1927—Continued

SCHEDULE G

GENERAL UNIVERSITY—Continued

Instructional Departments:

| | Total Expenditures 1926-1927 | For Salaries and Wages | For Supplies and Other Expenses |
|---------------------------------------|------------------------------------|------------------------------|---------------------------------------|
| College of Agriculture | 87,994.12 | 77,503.03 | 10,491.09 |
| College of Arts and Sciences | 154,260.75 | 143,212.78 | 11,047.97 |
| College of Education | 29,096.26 | 27,180.67 | 1,915.59 |
| College of Engineering | 38,989.14 | 36,539.08 | 2,450.06 |
| College of Home Economics | 11,428.50 | 10,611.13 | 817.37 |
| Military Science and Tactics | 5,946.46 | 3,801.14 | 2,145.32 |
| Physical Education for Men | 5,310.00 | 5,310.00 | ..... |
| Physical Education for Women | 3,676.05 | 3,299.19 | 376.86 |
| Graduate School | 7,407.21 | 7,222.26 | 184.95 |
| Summer School | 9,005.44 | 8,586.25 | 419.19 |
| Total Instructional Departments | \$353,113.93 | \$323,265.53 | \$29,848.40 |

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Service and Health Departments:

| | | | |
|--|--------------|-------------|-------------|
| The Dining Hall | 127,501.85 | 28,685.17 | 98,816.68 |
| The Laundry | 5,538.22 | 5,050.77 | 487.45 |
| The Hospital | 4,872.04 | 4,413.25 | 458.79 |
| Total Service and Health Departments | \$137,912.11 | \$38,149.19 | \$99,762.92 |

State Inspection Laboratory:

| | | | |
|--|-----------|-----------|----------|
| Analysis of Samples and Other Inspection and Police Costs | 25,680.09 | 19,900.00 | 5,780.09 |
|--|-----------|-----------|----------|

Special Plant Expenditures:

| | | | |
|---------------------------|----------|----------|-------|
| Campus Improvements | 1,273.71 | 1,263.26 | 10.45 |
|---------------------------|----------|----------|-------|

Miscellaneous Expenditures:

| | | | |
|---|-------------|-------|-------------|
| Student Refunds | 8,343.94 | ..... | 8,343.94 |
| Transfer of Fees Collected for Athletic Board | 15,042.06 | ..... | 15,042.06 |
| Total Miscellaneous Expenditures | \$23,386.00 | ..... | \$23,386.00 |

STATEMENT OF EXPENDITURES BY DEPARTMENTS, 1926-1927—Continued

SCHEDULE G

GENERAL UNIVERSITY—Continued
Non-Educational Funds Handled Through the General University:

| | Total Expenditures 1926-1927 | For Salaries and Wages | For Supplies and Other Expenses |
|------------------------------------|------------------------------------|------------------------------|---------------------------------------|
| State Board of Agriculture..... | 5,000.00 | 3,400.00 | 1,600.00 |
| State Dairymen's Association | 5,000.00 | 4,776.99 | 223.01 |
| Mining Extension | 4,200.00 | 4,200.00 | ..... |
| Total Non-Educational Funds..... | *\$14,200.00 | \$12,376.99 | \$1,823.01 |

Revolving Funds:

| | | | |
|-------------------------------------|--------------|-------------|--------------|
| Students' Supply Store..... | 34,364.85 | 4,480.00 | 29,884.85 |
| University Press | 6,252.81 | 3,400.00 | 2,852.81 |
| University Storehouse | 5,697.51 | ..... | 5,697.51 |
| Dairy Manufacturing Laboratory..... | 116,204.98 | 11,258.30 | 104,946.68 |
| Advanced Registry Testing..... | 5,700.61 | 3,931.25 | 1,769.36 |
| Total Revolving Funds..... | \$168,220.76 | \$23,069.55 | \$145,151.21 |

TOTALS—GENERAL UNIVERSITY EXPENDITURES, 1926-1927

\$919,473.60

\$524,895.52

\$394,578.08

EASTERN BRANCH:

| | | | |
|--|-------------|-------------|-------------|
| State Fund | \$18,120.00 | \$8,180.00 | \$9,940.00 |
| Morrill-Nelson Fund | 10,095.01 | 10,095.01 | ..... |
| General Receipt Fund | 4,893.69 | 3,792.18 | 1,101.51 |
| Totals—Eastern Branch Expenditures, 1926-1927..... | \$33,108.70 | \$22,067.19 | \$11,041.51 |

*These Funds were transferred to other departments in 1927-28.

STATEMENT OF EXPENDITURES BY DEPARTMENTS, 1926-1927—Continued

SCHEDULE G

EXPERIMENT STATION:

| | Total Expenditures 1926-1927 | For Salaries and Wages | For Supplies and Other Expenses |
|--|------------------------------------|------------------------------|---------------------------------------|
| State Fund for Research..... | \$66,900.00 | \$40,654.75 | \$26,245.25 |
| Biological Laboratory..... | 15,427.83 | 8,021.42 | 7,406.41 |
| Seed Inspection..... | 8,200.00 | 6,800.00 | 1,400.00 |
| Hatch Fund..... | 14,973.21 | 14,883.60 | 89.61 |
| Adams Fund..... | 14,793.19 | 13,467.48 | 1,325.71 |
| Purnell Fund..... | 31,805.05 | 26,779.55 | 5,025.50 |
| Station Farm Fund..... | 27,733.89 | 14,855.22 | 12,878.67 |
| Fellowship Fund..... | 2,673.67 | 1,926.14 | 747.53 |
| Ridgely Farm Fund..... | 5,317.65 | 3,826.86 | 1,490.79 |
| James Todd Trust Fund..... | 123.62 | ..... | 123.62 |
| Totals—Experiment Station Expenditures, 1926-1927..... | \$187,948.11 | \$131,215.02 | \$56,733.09 |

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EXTENSION SERVICE:

| | | | |
|--|----------------|--------------|--------------|
| State Smith-Lever..... | \$46,287.11 | \$35,200.00 | \$11,087.11 |
| County Demonstration..... | 50,000.00 | 40,000.00 | 10,000.00 |
| General Extension..... | 37,484.36 | 17,998.99 | 19,485.37 |
| State Horticultural Department..... | 12,560.00 | 8,300.00 | 4,260.00 |
| Marketing Extension..... | 10,000.00 | 7,000.00 | 3,000.00 |
| Federal Smith-Lever..... | 76,476.47 | 68,769.65 | 7,706.82 |
| Insect Control..... | 2,275.76 | 814.20 | 1,461.56 |
| Total Extension Service Expenditures, 1926-1927..... | \$235,083.70 | \$178,082.84 | \$57,000.86 |
| SUMMARY: | | | |
| General University..... | \$919,473.60 | \$524,895.52 | \$394,578.08 |
| Eastern Branch..... | 33,108.70 | 22,067.19 | 11,041.51 |
| Experiment Station..... | 187,948.11 | 131,215.02 | 56,733.09 |
| Extension Service..... | 235,083.70 | 178,082.84 | 57,000.86 |
| Totals..... | \$1,375,614.11 | \$856,260.57 | \$519,353.54 |

STATEMENT OF EXPENDITURES BY DEPARTMENTS, 1927-1928

SCHEDULE H

GENERAL UNIVERSITY:

Administration:

Office of the President, Assistant to President and Business Offices

Registrar

Dean of Women

The Library

Bureau of Information

General Service:

Department of Buildings and Grounds

Janitorial Department

Heating Plant

Purchasing, Mail, Transportation, Etc.:

Purchasing Office, Post Office, Freight and Express, Bus Service and Military Stores

Miscellaneous Overhead:

Group Insurance

Fire Insurance

Commencement

Travel for Educational Purposes

Expenses of Debating Teams

Entertainment of Guests

General Music Costs

Departmental Postage

Association Dues

Premiums on Bonds

Interest on Loans

Student Employment Bureau

Farmers' Day

Miscellaneous Expenses

Totals General Expenses

For
Supplies and
Other Expenses

For
Salaries and
Wages

Total
Expenditures
1927-1928

\$4,828.89

1,285.82

185.60

6,056.50

6,512.70

34,988.28

1,756.99

13,971.99

1,864.11

10,382.58

13,521.07

1,982.42

402.77

67.80

376.74

975.29

500.00

547.50

133.32

522.50

180.00

121.90

4.40

\$102,587.75

\$113,086.99

\$215,674.74

STATEMENT OF EXPENDITURES BY DEPARTMENTS, 1927-1928—Continued

SCHEDULE H

GENERAL UNIVERSITY—Continued

Instructional Departments:

| | Total Expenditures 1927-1928 | For Salaries and Wages | For Supplies and Other Expenses |
|---------------------------------------|------------------------------------|------------------------------|---------------------------------------|
| College of Agriculture | \$90,635.46 | \$80,615.00 | \$10,020.46 |
| College of Arts and Sciences | 158,223.81 | 146,845.59 | 11,378.22 |
| College of Education | 30,686.38 | 28,849.81 | 1,836.57 |
| College of Engineering | 42,212.68 | 39,128.65 | 3,084.03 |
| College of Home Economics | 11,960.19 | 11,295.52 | 664.67 |
| Military Science and Tactics | 5,830.62 | 3,992.45 | 1,848.17 |
| Physical Education for Men | 5,759.54 | 5,756.04 | 3.50 |
| Physical Education for Women | 2,014.93 | 1,758.83 | 256.10 |
| Graduate School | 8,718.47 | 6,943.29 | 1,775.18 |
| Summer School | 12,275.12 | 11,616.50 | 658.62 |
| Totals Instructional Departments..... | \$368,317.20 | \$336,791.68 | \$31,525.52 |

Service and Health Departments:

| | | | |
|--|--------------|-------------|-------------|
| The Dining Hall | \$114,953.33 | \$29,445.20 | \$85,508.13 |
| The Laundry | 4,882.36 | 4,446.55 | 435.81 |
| The Hospital | 5,373.41 | 5,121.65 | 251.76 |
| Totals Service and Health Departments..... | \$125,209.10 | \$39,013.40 | \$86,195.70 |

State Inspection Laboratory:

| | | | |
|--|-------------|-------------|------------|
| Analysis of Samples and Other Inspection and Police Costs | \$27,528.90 | \$21,206.14 | \$6,322.76 |
| Totals State Inspection Laboratory..... | \$27,528.90 | \$21,206.14 | \$6,322.76 |

STATEMENT OF EXPENDITURES BY DEPARTMENTS, 1927-1928—Continued

SCHEDULE H

GENERAL UNIVERSITY—Continued

Special Plant Expenditures:

| | | | |
|---|--------------|--------------|----------------|
| Campus Improvement | Total | For | For |
| Sewer and Water Lines | Expenditures | Salaries and | Supplies and |
| Classroom Equipment | 1927-1928 | Wages | Other Expenses |
| Chemistry Building Equipment | \$3,976.11 | ..... | \$3,976.11 |
| Bronze Tablet Chemistry Building | 3,000.00 | ..... | 3,000.00 |
| Paving Bill, M St. Property | 1,008.00 | ..... | 1,008.00 |
| Balance of Architect's Fees, Dining Hall and Chemistry Building | 16,626.88 | ..... | 16,626.88 |
| Survey of Campus and Drawings | 165.00 | ..... | 165.00 |
| | 124.56 | ..... | 124.56 |
| | 2,436.44 | ..... | 2,436.44 |
| | 305.75 | ..... | 305.75 |

Totals Special Plant Expenditures.....

\$27,642.74

Miscellaneous Expenditures:

| | | | |
|--|-------------|-------|-------------|
| Student Refunds | | | |
| Over and Short Cash Charged Off | \$9,003.79 | ..... | \$9,003.79 |
| Cancelled Check Reinstated | 30.00 | ..... | 30.00 |
| Departmental Transfers: | 3.00 | ..... | 3.00 |
| From General University Funds to Advanced Registry Testing | | | |
| Fees Collected for Athletic Board | 2,350.00 | ..... | 2,350.00 |
| Petty Cash Fund, Dairy Manufacturing Laboratory | 15,772.27 | ..... | 15,772.27 |
| Transfer of Fund Balances: | 300.00 | ..... | 300.00 |
| Mining Extension to Extension Service | 480.00 | ..... | 480.00 |
| Advanced Registry to Extension Service | 213.09 | ..... | 213.09 |
| Total Miscellaneous and Transfers | \$28,152.15 | ..... | \$28,152.18 |

STATEMENT OF EXPENDITURES BY DEPARTMENTS, 1927-1928—Continued

SCHEDULE H

GENERAL UNIVERSITY—Continued

Revolving Funds:

| | Total Expenditures 1927-1928 | For Salaries and Wages | For Supplies and Other Expenses |
|--------------------------------|------------------------------------|------------------------------|---------------------------------------|
| Students' Supply Store | \$35,037.61 | \$4,550.00 | \$30,487.61 |
| University Press | 7,650.58 | 3,460.00 | 4,190.53 |
| University Storehouse | 8,170.46 | ..... | 8,170.46 |
| Dairy Manufacturing Laboratory | 95,538.52 | 14,179.20 | 81,359.32 |
| Advanced Registry Testing | *2,300.15 | 1,694.37 | 605.78 |
| Total Revolving Funds | \$148,697.32 | \$23,883.57 | \$124,813.75 |

Grand Total of Expenditures for the General University,
1927-1928

\$941,222.15

EASTERN BRANCH:

| | | | |
|------------------------------------|-------------|-------------|-------------|
| Eastern Branch State Fund | \$23,120.00 | \$16,466.00 | \$6,654.00 |
| Eastern Branch Federal Fund | 10,150.00 | 9,733.31 | 416.69 |
| Eastern Branch Receipts Fund | 3,744.40 | 78.00 | 3,666.40 |
| Totals Eastern Branch Expenditures | \$37,014.40 | \$26,277.31 | \$10,737.09 |

EXPERIMENT STATION:

| | | | |
|--|--------------|--------------|-------------|
| State Fund for Research | \$66,900.00 | \$40,659.69 | \$26,204.31 |
| Biological Laboratory | 12,932.21 | 6,086.66 | 6,845.55 |
| Seed Inspection | 9,700.00 | 7,920.00 | 1,780.00 |
| Hatch Fund | 15,186.75 | 14,840.00 | 346.75 |
| Adams Fund | 15,464.82 | 14,199.00 | 1,265.82 |
| Purnell Fund | 42,965.96 | 36,307.93 | 6,658.03 |
| Station Farm Fund | 26,066.33 | 12,460.71 | 13,605.62 |
| Fellowship Fund | 3,128.24 | 2,261.29 | 866.95 |
| Ridgely Farm Fund | 5,918.20 | 4,053.56 | 1,864.64 |
| James Todd Trust Fund | 161.40 | ..... | 161.40 |
| State Dairymen's Association | 5,000.00 | 4,590.79 | 409.21 |
| Totals Experiment Station Expenditures | \$203,423.91 | \$143,415.63 | \$60,008.28 |

*Transferred to Extension Service in January, 1928.

STATEMENT OF EXPENDITURES BY DEPARTMENTS, 1927-1928—Continued

SCHEDULE H

| | Total Expenditures 1927-1928 | For Salaries and Wages | For Supplies and Other Expenses |
|--|------------------------------------|------------------------------|---------------------------------------|
| EXTENSION SERVICE: | | | |
| State Smith-Lever | \$46,287.11 | \$35,200.00 | \$11,087.11 |
| County Demonstration | 60,000.00 | 48,000.00 | 12,000.00 |
| General Extension | 33,885.20 | 11,930.13 | 21,955.07 |
| State Horticultural Department | 12,560.00 | 8,400.00 | 4,160.00 |
| Marketing Extension | 10,000.00 | 7,000.00 | 3,000.00 |
| Canning Extension | 10,000.00 | 7,003.00 | 2,997.00 |
| Mining Extension | 4,020.00 | 4,020.00 | |
| Federal Smith-Lever | 48,662.03 | 41,294.24 | 7,327.79 |
| Federal Smith-Lever Supplementary | 16,804.34 | 16,804.34 | |
| Capper Ketcham | 1,897.48 | 1,897.48 | |
| Insect Control (Emergency) | 13,858.78 | 1,658.66 | 12,200.12 |
| Advanced Registry Testing | 7,860.44 | 5,856.55 | 2,003.89 |
| Total Extension Service Expenditures | \$265,795.38 | \$189,064.40 | \$76,730.98 |
| SUMMARY: | | | |
| General University | \$941,222.15 | \$537,214.09 | \$404,008.06 |
| Eastern Branch | 37,014.40 | 26,277.31 | 10,737.09 |
| Experiment Station | 203,423.91 | 143,415.63 | 60,008.28 |
| Extension Service | 265,795.38 | 189,064.40 | 76,730.98 |
| Grand Total of Expenditures, 1927-1928 | \$1,447,455.84 | \$895,971.43 | \$551,484.41 |

COMPARISON OF INCOME, 1926-1927 WITH 1927-1928 SCHEDULE I

GENERAL UNIVERSITY:

From State Treasurer:

| | | | |
|--|-------------------------------|----------|-------------|
| State Appropriation for Maintenance | Total Income, 1927-1928 | Decrease | Increase |
| State Appropriation for Deficiency in Interest | \$227,195.45 | | \$38,804.55 |
| Interest on Land Grant Funds | 2,047.44 | | |
| | 4,784.49 | | |

From U. S. Treasurer:

| | | | |
|---------------------------|-----------|--|----------|
| Morrill-Nelson Fund | 40,000.00 | | |
| Smith-Hughes Fund | 8,081.36 | | 1,262.52 |

From Student Fees:

| | | | |
|-----------------------------|------------|--------|-----------|
| 4-Year Students | 291,243.91 | | 40,824.57 |
| Short Course Students | 737.00 | 244.00 | |

Summer School Students

| | | | |
|-------|-----------|--|----------|
| ..... | 22,169.12 | | 2,877.68 |
| ..... | 10,412.06 | | 9,788.24 |
| ..... | 40,759.33 | | |
| ..... | 16,235.43 | | |

From Reimbursements for Services, etc.

| | | | |
|-------|-----------|----------|--|
| ..... | 37,781.02 | 2,978.31 | |
| ..... | 13,212.33 | 3,023.10 | |

From Insurance:

| | | | |
|--------------------------------|----------|--|--------|
| Group, Life and Accident | 4,194.57 | | 941.08 |
| Fire Insurance | 299.24 | | 838.96 |

From Fertilizer, Lime and Feed Licenses and Tonnage Fees

| | | | |
|-------|-----------|----------|----------|
| ..... | 47,967.14 | | 3,440.06 |
| ..... | 7,068.00 | 4,000.00 | |
| ..... |  |  | 1,000.00 |

From Donations for Special Equipment

| | | | |
|-------|-----------|--|----------|
| ..... | 32,290.97 | | |
| ..... | 8,273.64 | | 763.63 |
| ..... | 8,384.76 | | 1,818.54 |

From Class of 1928—Endowment Fund

| | | | |
|-------|-----------|-----------|--|
| ..... | 95,247.51 | 20,052.95 | |
| ..... | 2,289.24 | 3,330.76 | |

Revolving Funds:

| | | | |
|--------------------------------------|-----------|--|--|
| Student Supply Store | *6,358.58 | | |
| University Press | | | |
| University Storehouse | | | |
| Dairy Manufacturing Laboratory | | | |
| Advanced Registry Testing | | | |

| | | | |
|----------------------------|--------------|--------------|--|
| Totals—College Funds | \$896,840.78 | \$959,212.91 | |
|----------------------------|--------------|--------------|--|

*Due to difference in date of registration.

COMPARISON OF INCOME, 1926-1927 WITH 1927-1928—Continued
SCHEDULE I

GENERAL UNIVERSITY—Continued

| | Total Income, 1926-1927 | Total Income, 1927-1928 | Decrease | Increase |
|--|-------------------------------|-------------------------------|-----------|-------------|
| State Board of Agriculture—Executive Expenses..... | **5,000.00 | ..... | 5,000.00 | ..... |
| State Dairymen's Association..... | ***5,000.00 | ..... | 5,000.00 | ..... |
| Mining Extension..... | ****4,200.00 | ..... | 4,200.00 | ..... |
| Totals Handled Through General University..... | 911,040.78 | 959,212.91 | 54,187.70 | 102,359.83 |
| | | 911,040.78 | | 54,187.70 |
| Net Increase—General University..... | | \$48,172.13 | | \$48,172.13 |

EASTERN BRANCH:

| | | | | |
|---|-------------|-------------|------------|------------|
| From State Appropriation for Maintenance..... | \$18,120.00 | \$23,120.00 | ..... | \$5,000.00 |
| From U. S. Appropriation Morrill Fund..... | 10,000.00 | 10,000.00 | ..... | ..... |
| From Student Fees..... | 3,732.69 | 2,231.00 | 1,501.69 | ..... |
| From Miscellaneous Sales..... | 1,305.86 | 1,534.78 | ..... | 228.92 |
| From Interest on Deposits..... | 78.95 | 76.28 | 2.67 | ..... |
| Totals—Eastern Branch..... | \$33,237.50 | \$36,962.06 | \$1,504.36 | \$5,228.92 |
| | | 33,237.50 | | 1,504.36 |
| Net Increase—Eastern Branch..... | | \$3,724.56 | | \$3,724.56 |

EXPERIMENT STATION:

From State Appropriations:

| | | | | |
|-----------------------------------|-------------|-------------|-------|------------|
| State Fund for Research..... | \$66,900.00 | \$66,900.00 | ..... | ..... |
| Biological Laboratory..... | 5,500.00 | 5,500.00 | ..... | ..... |
| Seed Inspection..... | 8,200.00 | 9,700.00 | ..... | \$1,500.00 |
| Ridgely Farm..... | 5,000.00 | 5,000.00 | ..... | ..... |
| State Dairymen's Association..... | ..... | 5,000.00* | ..... | 5,000.00 |

*Transferred from General University Account.

***Transferred to Baltimore.

****Transferred to Experiment Station.

*****Transferred to Extension.

COMPARISON OF INCOME, 1926-1927 WITH 1927-1928—Continued

SCHEDULE I

EXTENSION SERVICE—Continued

U. S. Appropriations:

| | Total Income, 1926-1927 | Total Income, 1927-1928 | Increase | Decrease |
|-----------------------------|-------------------------------|-------------------------------|----------|-----------|
| Hatch Fund | 15,000.00 | 15,000.00 | | |
| Adams Fund | 15,000.00 | 15,000.00 | | |
| Purnell Fund | 32,500.00 | 42,500.00 | | 10,000.00 |
| <i>From Other Sources:</i> | | | | |
| Biological Laboratory Sales | 9,037.44 | 7,821.48 | | 1,215.96 |
| Ridgely Farm Sales | 406.49 | 518.71 | | |
| Station Farm Sales | 27,013.11 | 26,884.15 | | 128.96 |
| Fellowship Funds | 2,775.00 | 4,125.00 | | 1,350.00 |

Totals—Experiment Station

\$187,332.04 \$203,949.34
187,332.04

Net Increase—Experiment Station

\$16,617.30

EXTENSION SERVICE:

From State Appropriations:

| | | | | |
|--------------------------------|-------------|-------------|--|-----------|
| State Smith-Lever | \$46,287.11 | \$46,287.11 | | |
| County Demonstration | 50,000.00 | 60,000.00 | | 10,000.00 |
| General Extension | 15,000.00 | 15,000.00 | | |
| State Horticultural Department | 12,560.00 | 12,560.00 | | |
| Marketing Extension | 10,000.00 | 10,000.00 | | |
| Canning Extension | | 10,000.00 | | 10,000.00 |
| Mining Extension | | *2,100.00 | | 2,100.00 |
| Insect Control | | 10,000.00 | | 10,000.00 |

From Federal Appropriations:

| | | | | |
|-----------------------------------|-----------|------------|--|-----------|
| Federal Smith-Lever | 56,287.11 | 56,287.11 | | |
| Federal Smith-Lever Supplementary | 14,676.40 | 16,228.89 | | 1,552.49 |
| Capper-Ketcham | | 10,000.00 | | 10,000.00 |
| Mining Extension | | **1,440.00 | | 1,440.00 |

*Transferred from General University.

**Transferred from General University.

COMPARISON OF INCOME, 1926-1927 WITH 1927-1928—Continued

SCHEDULE I

EXPERIMENT STATION—Continued

From Other Sources:

| | Total Income, 1926-1927 | Total Income, 1927-1928 | Decrease | Increase |
|--------------------------------------|-------------------------------|-------------------------------|-------------|--------------|
| General Extension Receipts..... | 23,573.21 | 18,673.24 | 4,899.97 | 7,614.06 |
| Advanced Registry Testing..... | | ***7,614.06 | | |
| Loan for Insect Control Work..... | 2,600.00 | | 2,600.00 | |
| Totals—Extension Service | \$230,983.83 | \$276,190.41 | \$7,499.97 | \$52,706.55 |
| | | 230,983.83 | | 7,499.97 |
| Net Increase—Extension Service | | \$45,206.58 | | \$45,206.58 |
| Grand Totals—All Departments..... | \$1,362,594.15 | \$1,476,314.72 | \$64,536.95 | \$178,257.52 |
| | | 1,362,594.15 | | 64,536.95 |
| Net Increase—All Departments..... | | \$113,720.57 | | \$113,720.57 |

SUMMARY:

| | |
|--|--------------|
| Net Increase—State Appropriations..... | \$70,304.55 |
| Net Increase—U. S. Appropriations..... | 22,155.01 |
| Net Increase—Student Fees..... | 64,862.68 |
| Net Decrease—Revolving Funds | \$27,160.12 |
| Net Decrease—Other Sources | 16,441.55 |
| | \$43,601.67 |
| | \$157,322.24 |

Net Increase—All Departments.....

\$113,720.57

***Transferred from General University.

COMPARISON OF EXPENDITURES BY DEPARTMENTS, 1926-1927 WITH 1927-1928 SCHEDULE J

GENERAL UNIVERSITY:

Administration:

Office of the President, Assistant to President and Business Offices

Registrar

Dean of Women

Library

Bureau of Information

General Service:

Department of Buildings and Grounds

Janitorial Department

Heating Plant

Purchasing, Mail, Transportation, Etc.:

Purchasing Office, Post Office, Freight and Express, Bus Service and Military Stores

Miscellaneous Overhead:

Group Insurance

Fire Insurance

Commencement

Travel for Educational Purposes

Expenses of Debating Teams

Entertainment of Guests

General Music Costs

Departmental Postage

Association Dues

Premiums on Bonds

Y. M. C. A. Support

Field Agent

Interest on Loans

General Equipment

Student Employment Bureau

Farmers' Day

Miscellaneous Expense

Totals—General Expense

| | Total Expenditures, 1926-1927 | Total Expenditures, 1927-1928 | Decrease | Increase |
|--|-------------------------------------|-------------------------------------|------------|-------------|
| Office of the President, Assistant to President and Business Offices | \$33,424.85 | \$35,874.72 | | \$2,449.87 |
| Registrar | 7,164.46 | 8,065.52 | | 901.06 |
| Dean of Women | 3,133.70 | 2,133.67 | *1,000.03 | |
| Library | 12,700.29 | 13,750.33 | | 1,050.04 |
| Bureau of Information | 9,983.55 | 10,181.30 | | 197.75 |
| Department of Buildings and Grounds | 59,721.02 | 63,112.27 | | 3,391.25 |
| Janitorial Department | 11,775.73 | 12,993.08 | | 1,217.35 |
| Heating Plant | 26,237.96 | 25,621.57 | 616.39 | |
| <i>Purchasing, Mail, Transportation, Etc.:</i> | | | | |
| Purchasing Office, Post Office, Freight and Express, Bus Service and Military Stores | 11,674.34 | 11,799.11 | | 124.77 |
| <i>Miscellaneous Overhead:</i> | | | | |
| Group Insurance | 8,924.24 | 10,382.58 | | 1,458.34 |
| Fire Insurance | 984.21 | 13,521.07 | | 12,536.86 |
| Commencement | 1,345.02 | 1,982.42 | | 637.40 |
| Travel for Educational Purposes | 190.64 | 402.77 | | 212.13 |
| Expenses of Debating Teams | 240.48 | 67.80 | 172.68 | |
| Entertainment of Guests | 64.80 | 376.74 | | 311.94 |
| General Music Costs | 1,636.86 | 1,675.29 | | 38.43 |
| Departmental Postage | 680.00 | 500.00 | 180.00 | |
| Association Dues | 414.18 | 547.50 | | 133.32 |
| Premiums on Bonds | 175.00 | 133.32 | 41.68 | |
| Y. M. C. A. Support | 500.00 | 500.00 | 500.00 | |
| Field Agent | 1,050.00 | 1,050.00 | 1,050.00 | |
| Interest on Loans | 1,002.50 | 522.50 | 480.00 | |
| General Equipment | 2,621.68 | 2,621.68 | 2,621.68 | |
| Student Employment Bureau | | 180.00 | | 180.00 |
| Farmers' Day | | 1,810.29 | | 1,810.29 |
| Miscellaneous Expense | 41.49 | 40.89 | .60 | |
| Totals—General Expense | \$195,687.00 | \$215,674.74 | \$6,663.06 | \$26,650.80 |
| | | | | 6,663.06 |
| | | | | \$19,987.74 |

Net Increase

*Due to redistribution of costs.

COMPARISON OF EXPENDITURES BY DEPARTMENTS, 1926-1927 WITH 1927-1928—Continued
SCHEDULE J

GENERAL UNIVERSITY—Continued

Instructional Departments:

| | Total Expenditures, 1926-1927 | Total Expenditures, 1927-1928 | Decrease | Increase |
|------------------------------------|-------------------------------------|-------------------------------------|-----------|------------|
| College of Agriculture | \$87,994.12 | \$90,635.46 | | \$2,641.34 |
| College of Arts and Sciences | 154,260.75 | 158,223.81 | | 3,963.06 |
| College of Education | 29,096.26 | 30,686.38 | | 1,590.12 |
| College of Engineering | 38,989.14 | 42,212.68 | | 3,223.54 |
| College of Home Economics | 11,428.50 | 11,960.19 | | 531.69 |
| Military Science and Tactics | 5,946.46 | 5,830.62 | 115.84 | |
| Physical Education for Men | 5,310.00 | 5,759.54 | | 449.54 |
| Physical Education for Women | 3,676.05 | 2,014.93 | *1,661.12 | |
| Graduate School | 7,407.21 | 8,718.47 | | 1,311.26 |
| Summer School | 9,005.44 | 12,275.12 | | 3,269.68 |

Totals Instructional Departments

| | | | | |
|--|--------------|--------------|------------|-------------|
| | \$353,113.93 | \$368,317.20 | \$1,776.96 | \$16,980.23 |
| | | | | 1,776.96 |

Service and Health Departments:

| | | | | |
|-----------------------|--------------|--------------|-------------|--------|
| The Dining Hall | \$127,501.85 | \$114,953.33 | \$12,548.52 | |
| The Laundry | 5,538.22 | 4,882.36 | 655.86 | |
| The Hospital | 4,872.04 | 5,373.41 | | 501.37 |

Totals Service and Health Departments

| | | | | |
|--|--------------|--------------|-------------|----------|
| | \$137,912.11 | \$125,209.10 | \$13,204.38 | \$501.37 |
| | | | 501.37 | |

State Inspection Laboratory:

| | | | | |
|---|-------------|-------------|--|------------|
| Analysis of Samples and Other Inspection and Police Costs | \$25,680.09 | \$27,528.90 | | \$1,848.81 |
|---|-------------|-------------|--|------------|

Totals State Inspection Laboratory

| | | | | |
|--|-------------|-------------|----------------|------------|
| | \$25,680.09 | \$27,528.90 | Total Increase | \$1,848.81 |
|--|-------------|-------------|----------------|------------|

*Decrease due to redistribution of costs.

COMPARISON OF EXPENDITURES BY DEPARTMENTS, 1926-1927 WITH 1927-1928—Continued

SCHEDULE J

GENERAL UNIVERSITY—Continued

Special Plant Expenditures:

| | Total Expenditures, 1926-1927 | Total Expenditures, 1927-1928 | Decrease | Increase |
|--|-------------------------------------|-------------------------------------|----------|------------|
| Campus Improvement | \$1,273.71 | \$3,976.11 | ..... | \$2,702.40 |
| Sewer and Water Lines | | 3,000.00 | ..... | 3,000.00 |
| Classroom Equipment | | 1,008.00 | ..... | 1,008.00 |
| Chemistry Building Equipment | | 16,626.88 | ..... | 16,626.88 |
| Bronze Tablet, Chemistry Building | | 165.00 | ..... | 165.00 |
| Paving Bill, M St. Property | | 124.56 | ..... | 124.56 |
| Balance of Architect's Fees, Dining Hall and Chemistry Building | | 2,436.44 | ..... | 2,436.44 |
| Survey of Campus and Drawings | | 305.75 | ..... | 305.75 |

Totals Special Plant Expenditures

\$1,273.71 \$27,642.74 Total Increase \$26,369.03

Miscellaneous Expenditures:

| | | | | |
|---------------------------------------|------------|------------|-------|----------|
| Student Refunds | \$8,343.94 | \$9,003.79 | ..... | \$659.85 |
| Over and Short Cash Charged Off ..... | ..... | 30.00 | ..... | 30.00 |
| Cancelled Check Reinstated ..... | ..... | 3.00 | ..... | 3.00 |

Departmental Transfers:

| | | | | |
|--|-----------|-----------|-------|----------|
| Transfer of General University Funds to Advanced Reg- istry Testing ..... | ..... | 2,350.00 | ..... | 2,350.00 |
| Transfer of Fees Collected for the Athletic Board | 15,042.06 | 15,772.27 | ..... | 730.21 |
| Transfer of Cash to Dairy Laboratory for Petty Cash Fund ..... | ..... | 300.00 | ..... | 300.00 |
| Transfer of Balances to Extension: Mining Extension ..... | ..... | 480.00 | ..... | 480.00 |
| Advanced Registry Testing ..... | ..... | 213.09 | ..... | 213.09 |

Totals Miscellaneous and Transfers

\$23,386.00 \$28,152.15 Increase \$4,766.15

COMPARISON OF EXPENDITURES BY DEPARTMENTS, 1926-1927 WITH 1927-1928—Continued

SCHEDULE J

GENERAL UNIVERSITY—Continued

Funds Transferred to Other Departments:

| | | | | | |
|---|-------------|--|--|--|--|
| State Board of Agriculture, Executive Expenses..... | | | | | |
| State Dairymen's Association..... | \$5,000.00 | | | | |
| Mining Extension..... | **5,000.00 | | | | |
| | ***4,200.00 | | | | |

Total Transfer of Non-Educational Funds.....

| | | | | | |
|--|-------------|--|--|----------|-------------|
| | \$14,200.00 | | | Decrease | \$14,200.00 |
|--|-------------|--|--|----------|-------------|

Revolving Funds:

| | | | | | |
|-------------------------------------|-------------|--------------|--|-------------|----------|
| Students' Supply Store..... | \$34,364.85 | \$35,037.61 | | | \$672.76 |
| University Press..... | 6,252.81 | 7,650.58 | | | 1,397.77 |
| University Storehouse..... | 5,697.51 | 8,170.46 | | | 2,472.95 |
| Dairy Manufacturing Laboratory..... | 116,204.98 | 95,538.52 | | 20,666.46 | |
| Advanced Registry Testing..... | 5,700.61 | ****2,300.15 | | ***3,400.46 | |

Totals Revolving Funds.....

| | | | | | |
|--|--------------|--------------|--|-------------|------------|
| | \$168,220.76 | \$148,697.32 | | \$24,066.92 | \$4,543.48 |
| | | | | 4,543.48 | |

Net Decrease

| | |
|--|-------------|
| | \$19,523.44 |
|--|-------------|

Totals—General University.....

| | | | | | |
|--|--------------|--------------|--|-------------|-------------|
| | \$919,473.60 | \$941,222.15 | | \$46,426.45 | \$68,175.00 |
| | | | | | 46,426.45 |

Net Increase All Departments of General University

| | |
|--|-------------|
| | \$21,748.55 |
|--|-------------|

*Transferred to Baltimore Office.

**Transferred to Experiment Station.

***Transferred to Extension.

****Transferred to Extension Service during year.

COMPARISON OF EXPENDITURES BY DEPARTMENTS, 1926-1927 WITH 1927-1928—Continued

SCHEDULE J

EASTERN BRANCH:

| | Total Expenditures, 1926-1927 | Total Expenditures, 1927-1928 | Decrease | Increase |
|------------------------------------|-------------------------------------|-------------------------------------|--------------|------------------------|
| Eastern Branch—State Funds | \$18,120.00 | \$23,120.00 | ..... | \$5,000.00 |
| Eastern Branch—Federal Funds | 10,095.01 | 10,150.00 | ..... | 54.99 |
| Eastern Branch—Receipt Funds | 4,893.69 | 3,744.40 | 1,149.29 | ..... |
| Totals Eastern Branch..... | \$33,108.70 | \$37,014.40 | \$1,149.29 | \$5,054.99 1,149.29 |
| | | | Net Increase | \$3,905.70 |

EXPERIMENT STATION:

| | | | | |
|-----------------------------------|--------------|--------------|--------------|-------------------------|
| State Fund for Research | \$66,900.00 | \$66,900.00 | ..... | ..... |
| Biological Laboratory | 15,427.83 | 12,932.21 | 2,495.62 | ..... |
| Seed Inspection | 8,200.00 | 9,700.00 | ..... | 1,500.00 |
| Hatch Fund | 14,973.21 | 15,186.75 | ..... | 213.54 |
| Adams Fund | 14,793.19 | 15,464.82 | ..... | 671.63 |
| Purnell Fund | 31,805.05 | 42,965.96 | ..... | 11,160.91 |
| Station Farm Fund | 27,733.89 | 26,066.33 | 1,667.56 | ..... |
| Fellowship Fund | 2,673.67 | 3,128.24 | ..... | 454.57 |
| Ridgely Farm Fund | 5,317.65 | 5,918.20 | ..... | 600.55 |
| James Todd Trust Fund | 123.62 | 161.40 | ..... | 37.78 |
| State Dairymen's Association..... | ..... | *5,000.00 | ..... | 5,000.00 |
| Totals Experiment Station..... | \$187,948.11 | \$203,423.91 | \$4,163.18 | \$19,638.98 4,163.18 |
| | | | Net Increase | \$15,475.80 |

*Carried in General University in 1926-1927.

COMPARISON OF EXPENDITURES BY DEPARTMENTS, 1926-1927 WITH 1927-1928—Continued

SCHEDULE J

EXTENSION SERVICE:

| | Total Expenditures, 1926-1927 | Total Expenditures, 1927-1928 | Decrease | Increase |
|---|-------------------------------------|-------------------------------------|-------------|-------------|
| State Smith-Lever | \$46,287.11 | \$46,287.11 | | |
| County Demonstration | 50,000.00 | 60,000.00 | | 10,000.00 |
| General Extension | 37,484.36 | 33,885.00 | 3,599.16 | |
| State Horticultural Department | 12,560.00 | 12,560.00 | | |
| Marketing Extension | 10,000.00 | 10,000.00 | | |
| Canning Extension | | 10,000.00 | | 10,000.00 |
| Mining Extension | | *4,020.00 | | 4,020.00 |
| Federal Smith-Lever | 63,452.81 | 48,622.03 | 14,830.78 | |
| Federal Smith-Lever Supplementary | 13,023.66 | 16,804.34 | | 3,780.68 |
| Capper-Ketcham | | 1,897.48 | | 1,897.48 |
| Insect Control (Emergency Fund) | | 13,858.78 | | 11,583.02 |
| Advanced Registry Testing | 2,275.76 | *7,860.44 | | 7,860.44 |
| Totals Extension Service | \$235,083.70 | \$265,795.38 | \$18,429.94 | \$49,141.62 |
| | | | | 18,429.94 |

SUMMARY:

| | Total Expenditures, 1926-1927 | Total Expenditures, 1927-1928 | Decrease | Increase | Net Increase |
|--------------------------|-------------------------------------|-------------------------------------|-------------|--------------|--------------|
| General University | \$919,473.60 | \$941,222.15 | \$46,426.45 | \$68,175.00 | \$21,748.55 |
| Eastern Branch | 33,108.70 | 37,014.40 | 1,149.29 | 5,054.99 | 3,905.70 |
| Experiment Station | 187,948.11 | 203,423.91 | 4,163.18 | 19,638.98 | 15,475.80 |
| Extension Service | 235,083.70 | 265,795.38 | 18,429.94 | 49,141.62 | 30,711.68 |
| Grand Totals | \$1,375,614.11 | \$1,447,455.84 | \$70,168.86 | \$142,010.59 | \$71,841.73 |

*Carried in General University in 1926-1927.

SUMMARY OF INVENTORY OF LAND, BUILDINGS AND EQUIPMENT AS OF SEPTEMBER 30, 1928 (Not including Baltimore Schools or Hospital)

SCHEDULE K

| | General University | Eastern Branch | Experiment Station | Extension Service | Total |
|--|-----------------------|-------------------|-----------------------|----------------------|----------------|
| <i>Land:</i> | | | | | |
| College Park—286 Acres..... | \$85,800.00 | ..... | ..... | ..... | \$85,800.00 |
| College Park—12 Acres..... | ..... | ..... | \$3,600.00 | ..... | 3,600.00 |
| Ridgely—50 Acres..... | ..... | ..... | 6,000.00 | ..... | 6,000.00 |
| Princess Anne—73½ Acres..... | ..... | 9,000.00 | ..... | ..... | 9,000.00 |
| Total Land..... | \$85,800.00 | \$9,000.00 | \$9,600.00 | ..... | \$104,400.00 |
| <i>Buildings:</i> | | | | | |
| General University—College Park..... | \$1,285,633.97 | ..... | ..... | ..... | \$1,285,633.97 |
| Experiment Station, including Ridgely Farm and Tobacco Barn at Upper Marlboro..... | ..... | ..... | \$92,998.29 | ..... | 92,998.29 |
| Buildings at Princess Anne, for Negro Students..... | ..... | \$48,063.00 | ..... | ..... | 48,063.00 |
| Total Buildings..... | \$1,285,633.97 | \$48,063.00 | \$92,998.29 | ..... | \$1,426,695.26 |
| <i>Equipment:</i> | | | | | |
| General University..... | \$405,609.70 | ..... | ..... | ..... | \$405,609.70 |
| Experiment Station..... | ..... | ..... | \$102,439.70 | ..... | 102,439.70 |
| Extension Service..... | ..... | ..... | ..... | \$21,218.59 | 21,218.59 |
| Eastern Branch..... | ..... | \$20,355.39 | ..... | ..... | 20,355.39 |
| Total Equipment..... | \$405,609.70 | \$20,355.39 | \$102,439.70 | \$21,218.59 | \$549,623.38 |
| <i>Other Capital Assets:</i> | | | | | |
| Water and Sewer Lines..... | \$3,000.00 | ..... | ..... | ..... | \$3,000.00 |
| Roads and Walks..... | 55,661.01 | ..... | ..... | ..... | 55,661.01 |
| Campus Plantings, etc..... | 15,541.57 | ..... | ..... | ..... | 15,541.57 |
| Total Miscellaneous..... | \$74,202.58 | ..... | ..... | ..... | \$74,202.58 |
| Total Plant Assets..... | \$1,851,246.25 | \$77,418.39 | \$205,037.99 | \$21,218.59 | \$2,154,921.22 |

*These figures are based on costs. An appraisal of present value of buildings and equipment will soon be made and the next report will be based on the valuations as appraised.

DETAILS OF INVENTORY OF LAND, BUILDINGS AND EQUIPMENT AS OF SEPTEMBER 30, 1928

SCHEDULE L

Land:

| | General University | Eastern Branch | Experiment Station | Extension Service | Total |
|---------------------------------|-----------------------|-------------------|-----------------------|----------------------|--------------|
| 286 Acres at College Park..... | \$85,800.00 | ..... | ..... | ..... | \$85,800.00 |
| 12 Acres at College Park..... | ..... | ..... | \$3,600.00 | ..... | 3,600.00 |
| 50 Acres at Ridgely..... | ..... | ..... | 6,000.00 | ..... | 6,000.00 |
| 73½ Acres at Princess Anne..... | ..... | \$9,000.00 | ..... | ..... | 9,000.00 |
| Total Land | \$85,800.00 | \$9,000.00 | \$9,600.00 | ..... | \$104,400.00 |

Buildings:

| | | | | | |
|--|--------------|-------|-------|-------|-------|
| Agricultural Building | \$199,731.94 | ..... | ..... | ..... | ..... |
| Bake Shop | 400.00 | ..... | ..... | ..... | ..... |
| Boiler House | 160.00 | ..... | ..... | ..... | ..... |
| Calvert Hall | 107,000.00 | ..... | ..... | ..... | ..... |
| Cannery | 625.00 | ..... | ..... | ..... | ..... |
| Carriage Shed | 900.00 | ..... | ..... | ..... | ..... |
| Chemistry Building (Old) | 18,000.00 | ..... | ..... | ..... | ..... |
| Engineering Buildings | 80,000.00 | ..... | ..... | ..... | ..... |
| Gas Machine House..... | 300.00 | ..... | ..... | ..... | ..... |
| Girls' Dormitory (Y-Hut) | 3,000.00 | ..... | ..... | ..... | ..... |
| Girls' Dormitory (Gerneaux Hall) | 8,000.00 | ..... | ..... | ..... | ..... |
| Greenhouses (College) | 8,000.00 | ..... | ..... | ..... | ..... |
| Home Economics Practice House | 25,500.00 | ..... | ..... | ..... | ..... |
| Hospital | 7,500.00 | ..... | ..... | ..... | ..... |
| Insectary | 150.00 | ..... | ..... | ..... | ..... |
| Library | 16,090.00 | ..... | ..... | ..... | ..... |
| New Pump House..... | 100.00 | ..... | ..... | ..... | ..... |
| Old Pump House..... | 1,100.00 | ..... | ..... | ..... | ..... |
| Science Hall | 36,775.00 | ..... | ..... | ..... | ..... |
| Tenant House | 533.00 | ..... | ..... | ..... | ..... |

DETAILS OF INVENTORY OF LAND, BUILDINGS AND EQUIPMENT AS OF SEPT. 30, 1928—Continued

SCHEDULE L

Buildings—Continued

| | General University | Eastern Branch | Experiment Station | Extension Service | Total |
|---|-----------------------|-------------------|-----------------------|----------------------|-----------------------|
| Silverster Hall | 97,000.00 | ..... | ..... | ..... | ..... |
| Storage Shed | 270.00 | ..... | ..... | ..... | ..... |
| Stable and Garage | 1,600.00 | ..... | ..... | ..... | ..... |
| Water Tower and Tank | 4,400.00 | ..... | ..... | ..... | ..... |
| Filtration Plant | 25,142.63 | ..... | ..... | ..... | ..... |
| Gymnasium, Armory and Stadium | 162,559.96 | ..... | ..... | ..... | ..... |
| Dairy Manufacturing Laboratory | 111,300.00 | ..... | ..... | ..... | ..... |
| Buildings Completed Since Last Report: | | | | | |
| New Laundry | 6,000.00 | ..... | ..... | ..... | ..... |
| New Dining Hall | 153,073.94 | ..... | ..... | ..... | ..... |
| New Chemistry Building | 210,422.50 | ..... | ..... | ..... | ..... |
| Total—General University Buildings | | | | | \$1,285,633.97 |

Buildings—Experiment Station:

| | | | | | |
|---|-------------|-------|-------|-------|-------|
| Rosshour Building | \$11,500.00 | ..... | ..... | ..... | ..... |
| Agromony Building | 3,500.00 | ..... | ..... | ..... | ..... |
| Bacteriology Laboratory | 11,200.00 | ..... | ..... | ..... | ..... |
| Seed Storage and Machinery Building | 1,200.00 | ..... | ..... | ..... | ..... |
| Dairy Building | 1,050.00 | ..... | ..... | ..... | ..... |
| Hog House | 830.00 | ..... | ..... | ..... | ..... |
| Horticultural Building | 8,800.00 | ..... | ..... | ..... | ..... |
| Cow Stable | 4,200.00 | ..... | ..... | ..... | ..... |
| Dairy Building and Stable | 17,300.00 | ..... | ..... | ..... | ..... |
| Hay Barrack | 2,300.00 | ..... | ..... | ..... | ..... |
| Silos (3) | 1,333.00 | ..... | ..... | ..... | ..... |
| Poultry Feed Houses | 400.00 | ..... | ..... | ..... | ..... |
| Poultry Houses | 706.00 | ..... | ..... | ..... | ..... |
| Poultry Storage House | 300.00 | ..... | ..... | ..... | ..... |

DETAILS OF INVENTORY OF LAND, BUILDINGS AND EQUIPMENT AS OF SEPT. 30, 1928—Continued

SCHEDULE L

Buildings—Experiment Station—Continued

| | General University | Eastern Branch | Experiment Station | Extension Service | Total |
|------------------------------------|-----------------------|-------------------|-----------------------|----------------------|-------------|
| Main Poultry House..... | | | 2,000.00 | | |
| Barn | | | 260.00 | | |
| Dwelling—Farm House | | | 3,100.00 | | |
| Pebble Dash | | | 1,290.00 | | |
| Shingle Roof | | | 1,240.00 | | |
| Concrete Blocks | | | 2,200.00 | | |
| Frame | | | 1,100.00 | | |
| Oxidation Plant | | | 8,424.29 | | |
| Ridgely Farm: | | | | | |
| Main Buildings | | | 6,000.00 | | |
| Tools and Machinery Building | | | 750.00 | | |
| Wagon Shed | | | 225.00 | | |
| Hog House | | | 80.00 | | |
| Chicken House | | | 125.00 | | |
| Tenant and Smoke House | | | 585.00 | | |
| Upper Marlboro: | | | | | |
| Tobacco Barn | | | 1,000.00 | | |
| Totals Experiment Station | | | \$92,998.29 | | \$92,998.25 |

EASTERN BRANCH:

| | | | | | |
|---|-------------|--|--|--|-------------|
| Portable Classroom | \$2,250.00 | | | | |
| Barn | 2,500.00 | | | | |
| Dwelling | 2,000.00 | | | | |
| Six Small Buildings | 1,313.00 | | | | |
| Building Constructed Since Last Report: | | | | | |
| Dormitory and Classroom | 40,000.00 | | | | |
| Total—Eastern Branch | \$48,063.00 | | | | \$48,063.00 |

DETAILS OF INVENTORY OF LAND, BUILDINGS AND EQUIPMENT AS OF SEPT. 30, 1928—Continued

SCHEDULE L

Equipment:

| | General University | Eastern Branch | Experiment Station | Extension Service | Total |
|--------------------------|-----------------------|-------------------|-----------------------|----------------------|--------------|
| General University | \$405,609.70 | | | | |
| Experiment Station | | | \$102,439.70 | | |
| Extension Service | | | | \$21,218.59 | |
| Eastern Branch | | \$20,355.39 | | | |
| Total Equipment | \$405,609.70 | \$20,355.39 | \$102,439.70 | \$21,218.59 | \$549,623.38 |

Other Plant Assets:

| | | | | | |
|---|----------------|-------------|--------------|-------------|----------------|
| Water and Sewer Lines | *\$3,000.00 | | | | |
| Roads and Walks | 55,661.01 | | | | |
| Campus Plantings and Improvements | 15,541.57 | | | | |
| Total Miscellaneous | \$74,202.58 | | | | \$74,202.58 |
| Total Property Valuations | \$1,851,246.25 | \$77,418.39 | \$205,037.99 | \$21,218.59 | \$2,154,921.22 |

*Expenditures within the biennium 1926-1928. No appraisal has ever been made of the value of the old water and sewer lines.

INVENTORY OF SUPPLIES AS OF SEPTEMBER 30, 1928

| | Office Supplies and Stationery | Chemicals and Laboratory Supplies | Farm Gardens and Greenhouses | Lumber and Hardware | Fuel | Other Supplies |
|------------------------------------|--------------------------------------|---|------------------------------------|---------------------------|------------|-------------------|
| President's Office | \$89.00 | | | | | |
| Business Offices | 591.71 | | | | | |
| Registrar's Office | 356.93 | | | | | |
| Dean of Women | 93.14 | | | | | |
| Library | 45.10 | | | | | |
| College of Arts and Sciences | 7,812.13 | | | | | |
| College of Agriculture | 1,496.00 | | \$575.00 | \$26.00 | | |
| Bacteriology and Sanitation | 813.97 | | | | | |
| College of Engineering | 149.53 | | | | | |
| College of Education | 93.50 | | | | | |
| College of Home Economics | 19.43 | | | | | |
| Military Science | 33.20 | | | | | |
| Graduate School | 155.80 | | | | | |
| General Service | 8,105.78 | | | | \$1,145.04 | \$5,353.62 |
| Purchasing Department | 194.43 | 8.28 | | 1,487.48 | | |
| Dining Hall | 78.52 | | | | | 2,547.18 |
| Dining Hall Food Supplies | 2,547.18 | | | | | |
| Educational Departments | \$22,675.35 | \$9,186.40 | \$575.00 | \$1,513.48 | \$1,145.04 | \$7,900.80 |
| State Inspection Laboratory | \$2,849.60 | \$99.60 | \$2,750.00 | | | |

INVENTORY OF SUPPLIES AS OF SEPTEMBER 30, 1928—Continued

Earning Departments:

Dairy Mfg. Laboratory:
 Factory Supplies... \$5,943.52
 Finished Goods 1,596.39
 Raw Materials..... 1,520.14
 Salesroom Sup..... 711.14

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Students' Supply Store:
 Stock on Hand
 University Press:
 Stock on Hand

| | | | | | | | | | |
|---|-------------|------------|-------------|------------|------------|------------|-------------|--|--|
| | \$9,771.19 | | | | | | | | |
| Totals General University..... | \$40,633.90 | \$2,454.23 | \$11,936.40 | \$575.00 | \$1,513.48 | \$1,145.04 | \$23,009.75 | | |
| Experiment Station | \$8,698.90 | \$588.00 | \$1,002.15 | \$6,518.75 | \$100.00 | \$425.00 | \$65.00 | | |
| Extension Service | 2,189.10 | 533.03 | | | | | 1,656.07 | | |
| Eastern Branch | 1,771.73 | 31.00 | 144.25 | 251.00 | | 775.00 | 570.48 | | |
| Grand Totals—Inventory of Supplies | \$53,293.63 | \$3,606.26 | \$13,082.80 | \$7,344.75 | \$1,613.48 | \$2,345.04 | \$25,301.30 | | |

STATEMENT OF EXPENDITURES FROM THE BUILDING FUNDS FOR THE BIENNIUM 1926-1928

SCHEDULE N

Balances from Bond Issue of 1922-1925:

| | Balance Oct. 1, 1926 | Receipts for Biennium | Total for Biennium | Expenditures for Biennium | Balance Sept. 30, 1928 |
|---|-------------------------|--------------------------|-----------------------|------------------------------|---------------------------|
| Dormitory at Princess Anne..... (\$40,000) | \$ 863.38 | ..... | \$ 863.38 | \$ 863.38 | ..... |
| New Dining Hall—College Park (\$150,000) | 7,135.54 | \$33,000.00 | 40,135.54 | 40,135.54 | ..... |
| Chemistry Bldg.—College Park (\$210,000) | 25,662.37 | 150,000.00 | 175,662.37 | 175,662.37 | ..... |
| Totals from Previous Bond Issue..... | \$33,661.29 | \$183,000.00 | \$216,661.29 | \$216,661.29 | ..... |

Totals from Bond Issue of 1926-1928:

| | |
|------------------------------------|------------|
| <i>New Library Building</i> | \$200,000 |
| Balance in State Treasury..... | 195,000 |
| Received from State Treasurer..... | ..... |
| Amount Expended | \$5,000.00 |
| Total, Library Building..... | \$5,000.00 |
| | |
| ..... | \$739.70 |
| | |
| ..... | \$739.70 |
| ..... | \$4,260.30 |

Appropriations for Building Deficits:

| | |
|--|-------------|
| Deficit on Dairy Husbandry Building..... | \$40,000.00 |
| Deficit on Gymnasium, Armory | 15,000.00 |
| | |
| ..... | \$55,000.00 |
| | |
| ..... | \$55,000.00 |
| ..... | \$55,000.00 |

STATEMENT OF EXPENDITURES FROM THE BUILDING FUNDS FOR THE BIENNIUM 1926-1928—Cont'd

SCHEDULE N

| | Balance Oct. 1, 1926 | Receipts for Biennium | Total for Biennium | Expenditures for Biennium | Balance Sept. 30, 1928 |
|--|-------------------------|--------------------------|-----------------------|------------------------------|---------------------------|
| <i>Special Appropriation for Roads, Walks, Repairs, Equipment, etc.</i> | | | | | |
| Refund from State Roads Commission | | \$85,000.00 | \$85,000.00 | | |
| Amount Expended to Sept. 30, 1928: | | 1,133.86 | 1,133.86 | | |
| For Roads | | | | | |
| “ Walks | | | | \$49,755.45 | |
| “ Deficits on Dining Hall and Chemical Building | | | | 5,905.56 | |
| “ Campus Improvements | | | | 2,000.00 | |
| “ Alterations Agr. Bldg. Entrance | | | | 13,782.41 | |
| “ Chemistry Equipment | | | | 777.94 | |
| “ Seed Laboratory Equipment | | | | 3,522.87 | |
| “ Library Books | | | | 1,997.60 | |
| “ Interest on Building Funds Bor- rowed with the Governor's Ap- proval | | | | 2,000.00 | |
| “ Landscape Architect's Services | | | | 1,202.50 | |
| | | | | 110.00 | |
| | | \$86,133.86 | \$86,133.86 | \$81,054.33 | \$5,079.53 |
| Total Building Funds for the Biennium 1926- 1928 | \$33,661.29 | \$329,133.86 | \$362,795.15 | \$353,455.32 | \$9,339.83 |

FINANCIAL REPORT (BALTIMORE)

To the President of the University:

Sir: I submit herewith, in the following pages, Statement of Receipts and Expenditures of the Baltimore Schools for the biennium ending September 30, 1928.

Respectfully submitted,

J. H. TUCKER,
Acting Comptroller.

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TABLE 1. UNIVERSITY OF MARYLAND—BALTIMORE SCHOOLS

Consolidated Statement of Receipts and Expenditures for the Biennium Ending September 30, 1928

| RECEIPTS | | | |
|---|-----------------------|-----------------------|-----------------------|
| | Receipts 1926-1927 | Receipts 1927-1928 | Total for Biennium |
| Cash Balance, October 1, 1926..... | \$145,903.25 | | \$145,903.25 |
| Students' Fees | 344,311.76 | \$333,079.46 | 677,391.22 |
| Deposit on Specimens | 139.25 | 146.25 | 285.50 |
| Deposit on Skeletons | 14.00 | 80.00 | 94.00 |
| State Appropriation Account Maintenance | 52,500.00 | 108,500.00 | 161,000.00 |
| State Appropriation Account Equipment | 25,000.00 | | 25,000.00 |
| City of Baltimore Account Obstetrics and Other Sources..... | 9,659.75 | 9,764.75 | 19,424.50 |
| I. E. Emerson Fund..... | 3,000.00 | 6,000.00 | 9,000.00 |
| Julius Friedenwald Research Fund | 1,000.00 | 196.09 | 1,196.09 |
| Special Research Fund..... | | 171.88 | 171.88 |
| Elizabeth Thompson Fund | | 56.38 | 56.38 |
| Victor G. Bloede Fund | | 72.06 | 72.06 |
| Medical Extension Fund | 291.00 | 79.20 | 370.20 |
| Infirmary Receipts | 36,470.00 | 35,954.24 | 72,424.24 |
| Special Courses | | 6,087.50 | 6,087.50 |
| Donation Account Special Improvements..... | 1,500.00 | 500.00 | 2,000.00 |
| Interest on Deposits | 883.35 | 993.19 | 1,876.54 |
| Duplicate Diplomas | 36.25 | 24.10 | 57.35 |
| Sale of Greene Street Properties..... | | 500.00 | 500.00 |
| Sale of Old Equipment | 180.00 | 100.00 | 280.00 |
| Sale of Locks | | 22.00 | 22.00 |
| Rent—Dwellings | 180.00 | | 180.00 |
| Insurance (Adjustment) | 1,604.83 | | 1,604.83 |
| Petty Cash (Adjustment) | 868.48 | | 868.48 |
| Sundry Receipts | 587.55 | 71.60 | 659.15 |
| Transfer—Central Office and Library Account M. A. Gold- ring's Tuition | | 300.00 | 300.00 |

TABLE 1. UNIVERSITY OF MARYLAND—BALTIMORE SCHOOLS—Continued
Consolidated Statement of Receipts and Expenditures for the Biennium Ending September 30, 1928

| RECEIPTS—Continued | | | |
|--|-----------------------|-----------------------|-----------------------|
| | Receipts 1926-1927 | Receipts 1927-1928 | Total for Biennium |
| Transfer from Medical School | | 6,039.00 | 6,039.00 |
| “ “ Dental School | | 4,575.00 | 4,575.00 |
| “ “ Pharmacy School | | 3,660.00 | 3,660.00 |
| “ “ Law School | | 4,026.00 | 4,026.00 |
| Discount Vouchers Payable | 168.77 | 257.48 | 426.25 |
| Total Receipts | \$624,298.24 | \$521,253.18 | \$1,145,551.42 |
| EXPENDITURES | | | |
| Salaries and Wages | \$315,184.71 | \$328,818.45 | \$644,003.16 |
| Central Office and Library Assessment to Schools | | 18,300.00 | 18,300.00 |
| General Repairs | 3,820.20 | 7,077.86 | 10,898.06 |
| Light, Heat, Power and Water | 2,690.28 | 3,154.39 | 5,844.67 |
| Traveling Expenses | 2,197.94 | 2,073.33 | 4,271.27 |
| Transportation | 1,810.31 | 974.37 | 2,784.68 |
| Communication | 3,684.83 | 3,875.56 | 7,560.39 |
| Other Expenses | 5,983.11 | 11,094.89 | 17,078.00 |
| Fuel | 1,908.85 | 1,560.29 | 3,469.14 |
| Office Supplies and Stationery | 2,057.29 | 2,130.71 | 4,188.00 |
| Printing | 5,386.15 | 5,410.29 | 10,796.44 |
| Medical and Surgical Supplies | 7,029.72 | 3,344.91 | 10,374.63 |
| Laboratory Supplies | 28,689.84 | 21,579.81 | 50,269.65 |
| Clinical Supplies | 13,317.19 | 12,247.46 | 25,564.65 |
| Household, Laundry and Cleaning | 1,863.90 | 1,644.73 | 3,508.63 |
| Office Equipment | 2,215.56 | 1,560.55 | 3,776.11 |
| Laboratory Equipment | 11,929.40 | 13,532.93 | 25,462.33 |
| Educational, Recreational and Vocational Equipment | 3,413.94 | 4,687.26 | 8,101.20 |

TABLE 1. UNIVERSITY OF MARYLAND—BALTIMORE SCHOOLS—Continued
Consolidated Statement of Receipts and Expenditures for the Biennium Ending September 30, 1928

| EXPENDITURES—Continued | | | |
|---|-----------------------|-----------------------|-----------------------|
| | Receipts 1926-1927 | Receipts 1927-1928 | Total for Biennium |
| Improvements and Renewals..... | | | |
| Rent..... | 22,932.82 | 665.50 | 23,598.32 |
| Insurance..... | 17,215.71 | 15,842.36 | 33,058.07 |
| Interest, Bonds and Mortgages..... | 928.71 | 1,657.06 | 2,585.77 |
| Sinking Fund..... | 9,840.00 | 9,840.00 | 19,680.00 |
| *I. E. Emerson Fund..... | 1,600.00 | 1,600.00 | 3,200.00 |
| Special Courses..... | | 1,750.00 | 1,750.00 |
| Transfer to Law School Account M. A. Goldring's Tuition | | 2,031.14 | 2,031.14 |
| Special Administrative Expenses..... | | 300.00 | 300.00 |
| Julius Fdiedenwald Fund..... | | 1,205.30 | 1,205.30 |
| New Building Plans..... | 1,334.85 | | 1,334.85 |
| Deposits on Skeletons..... | 100.00 | | 100.00 |
| Deposit—Real Estate..... | 330.00 | | 330.00 |
| Sale of Locks..... | 2,000.00 | | 2,000.00 |
| Automobile..... | 220.00 | | 220.00 |
| Unpaid Bills October 1, 1926..... | 602.68 | | 602.68 |
| | 2,578.48 | | 2,578.48 |
| Total Expenditures..... | \$472,866.47 | \$477,959.15 | \$950,825.62 |
| Cash Balance September 30, 1928..... | | | \$194,725.80 |
| Total Receipts for Biennium ending September 30, 1928..... | | | \$1,445,551.42 |
| Total Expenditures for Biennium ending September 30, 1928..... | | | 950,825.62 |
| *Cash Balance for Biennium ending September 30, 1928..... | | | \$194,725.80 |
| NOTE: Isaac E. Emerson Fund held in reserve..... | | | |
| *Amount expended as above..... | | | \$9,000.00 |
| Balance as of September 30, 1928..... | | | 1,750.00 |
| **Cash Balance September 30, 1928, includes student fees collected during and prior | | | |
| to month of September, applicable to year 1928-29..... | | | \$86,611.00 |

TABLE II. UNIVERSITY OF MARYLAND—SCHOOL OF MEDICINE

Statement of Receipts and Expenditures for Biennium Ending September 30, 1928

RECEIPTS

| | Receipts 1926-1927 | Receipts 1927-1928 | Total for Biennium |
|--|-----------------------|-----------------------|-----------------------|
| Cash Balance, October 1, 1926..... | \$ 47,978.04 | | \$ 47,978.04 |
| Student Fees..... | 128,696.00 | \$141,885.50 | 270,581.50 |
| Deposit on Specimens..... | 139.25 | 146.25 | 285.50 |
| Deposit on Skeletons..... | | 36.00 | 36.00 |
| State Appropriation Account Maintenance..... | 42,500.00 | 42,500.00 | 85,000.00 |
| State Appropriation Account Equipment..... | 15,000.00 | | 15,000.00 |
| City Baltimore Account Obstetrics and Other Sources..... | 9,659.75 | 9,764.75 | 19,424.50 |
| Isaac E. Emerson Fund..... | 750.00 | 1,500.00 | 2,250.00 |
| Julius Friedenwald Research Fund..... | 1,000.00 | 196.09 | 1,196.09 |
| Special Research Fund..... | | 171.88 | 171.88 |
| Elizabeth Thompson Fund..... | | 56.38 | 56.38 |
| Victor G. Bloede Fund..... | | 72.06 | 72.06 |
| Medical Extension Fund..... | 291.00 | 79.20 | 370.20 |
| Donation Account Special Improvements..... | 1,500.00 | 500.00 | 2,000.00 |
| Interest on Deposits..... | 7.77 | 425.93 | 433.70 |
| Duplicate Diplomas..... | 6.50 | 12.25 | 18.75 |
| Sundry Receipts..... | | 10.65 | 10.65 |
| Sale of Greene Street Properties..... | | 500.00 | 500.00 |
| Petty Cash (Adjustment)..... | 479.62 | | 479.62 |
| Rent—Dwellings..... | 180.00 | | 180.00 |
| Sale of Old Equipment..... | 180.00 | | 180.00 |
| Insurance (Adjustment)..... | 1,604.83 | | 1,604.83 |
| Discount Vouchers Payable..... | 30.89 | 97.31 | 128.20 |
| Total Receipts..... | \$250,003.65 | \$197,954.25 | \$447,957.90 |

TABLE II. UNIVERSITY OF MARYLAND—SCHOOL OF MEDICINE—Continued
Statement of Receipts and Expenditures for Biennium Ending September 30, 1928

EXPENDITURES

| | Receipts 1926-1927 | Receipts 1927-1928 | Total for Biennium |
|---|-----------------------|-----------------------|-----------------------|
| Salaries and Wages..... | \$110,514.56 | \$110,371.85 | \$220,886.41 |
| Central Office and Library..... | | 6,039.00 | 6,039.00 |
| General Repairs..... | 1,100.29 | 2,857.19 | 3,957.48 |
| Light, Heat, Power and Water..... | 1,003.06 | 1,141.30 | 2,144.36 |
| Traveling Expenses..... | 472.35 | 729.50 | 1,201.85 |
| Transportation..... | 742.44 | 418.81 | 1,161.25 |
| Communications..... | 1,966.60 | 1,904.21 | 3,870.81 |
| Other Expenses..... | 1,755.09 | 6,650.21 | 8,405.30 |
| Fuel..... | 513.85 | 468.09 | 981.94 |
| Office Supplies and Stationery..... | 944.92 | 448.37 | 1,393.29 |
| Printing..... | 2,985.35 | 3,758.23 | 6,743.58 |
| Medical and Surgical Supplies..... | 7,029.72 | 3,344.91 | 10,374.63 |
| Laboratory Supplies..... | 14,055.44 | 11,074.83 | 25,130.27 |
| Household, Laundry and Cleaning..... | 408.64 | 272.49 | 681.13 |
| Office Equipment..... | 571.20 | 717.31 | 1,288.51 |
| Laboratory Equipment..... | 6,580.71 | 5,244.95 | 11,825.66 |
| Educational, Vocational and Recreational Equipment..... | 1,102.12 | 853.75 | 1,955.87 |
| Improvements and Renewals..... | 6,580.21 | 665.50 | 7,245.71 |
| Rent..... | 12,840.66 | 12,178.16 | 25,018.82 |
| Insurance..... | 198.90 | 657.06 | 855.96 |
| Interest, Bonds and Mortgages..... | 9,840.00 | 9,840.00 | 19,680.00 |
| Sinking Fund..... | 1,600.00 | 1,600.00 | 3,200.00 |
| *Isaac E. Emerson Fund..... | | 250.00 | 250.00 |
| Julius Friedenwald Research Fund..... | 1,334.85 | | 1,334.85 |
| Deposit on Skeletons..... | 330.00 | | 330.00 |

TABLE II. UNIVERSITY OF MARYLAND—SCHOOL OF MEDICINE—*Continued*
Statement of Receipts and Expenditures for Biennium Ending September 30, 1928

| EXPENDITURES— <i>Continued</i> | | | |
|--|-----------------------|-----------------------|-----------------------|
| | Receipts 1926-1927 | Receipts 1927-1928 | Total for Biennium |
| New Building Plans..... | 25.00 | | 25.00 |
| Automobile | 602.68 | | 602.68 |
| Unpaid Bills October 1, 1926..... | 1,002.66 | | 1,002.66 |
| Total Expenditures | \$186,101.30 | \$181,485.72 | \$367,587.02 |
| Cash Balance, September 30, 1928..... | | | \$80,370.88 |
| Total Receipts for Biennium ending September 30, 1928..... | | | \$447,957.90 |
| Total Expenditures for Biennium ending September 30, 1928..... | | | 367,587.02 |
| **Cash Balance for Biennium ending September 30, 1928..... | | | |
| NOTE: Isaac E. Emerson Fund held in reserve..... | | | |
| *Amount Expended as above..... | | | \$2,250.00 |
| Balance as of September 30, 1928..... | | | 250.00 |
| **Cash Balance September 30, 1928, includes student fees collected during and prior to month of September, applicable to year 1928-29..... | | | \$41,935.00 |

TABLE III. UNIVERSITY OF MARYLAND—SCHOOL OF DENTISTRY

Statement of Receipts and Expenditures for Biennium Ending September 30, 1928

RECEIPTS

| | Receipts 1926-1927 | Receipts 1927-1928 | Total for Biennium |
|------------------------------------|-----------------------|-----------------------|-----------------------|
| Cash Balance, October 1, 1926..... | \$42,487.38 | | \$42,487.38 |
| Student Fees..... | 102,886.00 | \$84,695.60 | 187,581.60 |
| Special Courses..... | | 4,867.50 | 4,867.50 |
| Deposit on Skeletons..... | 14.00 | 44.00 | 58.00 |
| Duplicate Diplomas..... | 24.25 | 8.85 | 33.10 |
| Infirmary Receipts..... | 36,470.00 | 35,954.24 | 72,424.24 |
| Interest on Deposits..... | 421.22 | 176.23 | 597.45 |
| Sundry Receipts..... | | 46.10 | 46.10 |
| Sale of Old Equipment..... | | 100.00 | 100.00 |
| Sale of Locks..... | | 22.00 | 22.00 |
| Petty Cash (Adjustment)..... | 179.62 | | 179.62 |
| Discount Vouchers Payable..... | 86.19 | 84.24 | 170.43 |
| Total Receipts..... | \$182,568.66 | \$125,998.76 | \$308,567.42 |

EXPENDITURES

| | | | |
|-----------------------------------|-------------|-------------|--------------|
| Salaries and Wages..... | \$98,956.66 | \$93,625.90 | \$192,582.56 |
| Central Office and Library..... | | 4,575.00 | 4,575.00 |
| General Repairs..... | 1,757.58 | 3,170.36 | 4,927.94 |
| Light, Heat, Power and Water..... | 960.20 | 1,160.31 | 2,120.51 |
| Traveling Expenses..... | 631.56 | 805.25 | 1,436.81 |
| Transportation..... | 767.26 | 199.92 | 967.18 |
| Communications..... | 794.67 | 937.37 | 1,732.04 |
| Other Expenses..... | 1,229.10 | 1,593.32 | 2,822.42 |
| Fuel..... | 556.24 | 468.10 | 1,024.34 |

TABLE III. UNIVERSITY OF MARYLAND—SCHOOL OF DENTISTRY—*Continued*

| EXPENDITURES— <i>Continued</i> | | Receipts 1927-1928 | Receipts 1927-1928 | Total for Biennium |
|--|--|-----------------------|-----------------------|-----------------------|
| Office Supplies and Stationery | | | | 1,119.94 |
| Printing | | 602.26 | 517.68 | 2,186.32 |
| Laboratory Supplies | | 1,460.65 | 725.67 | 7,718.74 |
| Clinical Supplies | | 4,135.07 | 3,583.67 | 25,564.65 |
| Household, Laundry and Cleaning | | 13,317.19 | 12,247.46 | 1,858.30 |
| Office Equipment | | 923.85 | 934.45 | 976.04 |
| Laboratory Equipment | | 720.20 | 255.84 | 8,141.47 |
| Educational, Vocational and Recreational Equipment | | 581.45 | 7,560.02 | 1,244.22 |
| Rent | | 364.83 | 879.39 | 4,028.59 |
| Insurance | | 2,187.51 | 1,841.08 | 951.78 |
| Special Courses | | 467.20 | 484.58 | 1,212.50 |
| Real Estate (Deposit) | | | 1,212.50 | 2,000.00 |
| Sale of Locks | | 2,000.00 | | 220.00 |
| New Building Plans | | 220.00 | | 25.00 |
| Improvements and Renewals | | 25.00 | | 8,143.49 |
| Unpaid Bills, October 1, 1926 | | 8,143.49 | | 1,182.38 |
| | | 1,182.38 | | |
| Total Expenditures | | \$141,984.35 | \$136,777.87 | \$278,762.22 |
| Cash Balance, September 30, 1928 | | | | \$29,805.20 |
| Total Receipts for Biennium ending September 30, 1928 | | | | \$308,567.42 |
| Total Expenditures for Biennium ending September 30, 1928 | | | | 278,762.22 |
| *Cash Balance for Biennium ending September 30, 1929 | | | | \$29,805.20 |
| *Cash Balance, September 30, 1928, includes student fees collected during and prior to September, applicable to the year 1928-29 | | | | \$18,744.00 |

TABLE IV. UNIVERSITY OF MARYLAND—SCHOOL OF PHARMACY

Statement of Receipts and Expenditures for Biennium Ending September 30, 1928

RECEIPTS

| | Receipts 1926-1927 | Receipts 1927-1928 | Total for Biennium |
|---|-----------------------|-----------------------|-----------------------|
| Cash Balance, October 1, 1926 | \$16,659.15 | | \$16,659.15 |
| Student Fees | 58,380.33 | \$65,265.36 | 123,645.69 |
| Special Courses | | 1,220.00 | 1,220.00 |
| State Appropriation Account Maintenance | 10,000.00 | 10,000.00 | 20,000.00 |
| State Appropriation Account New Equipment | 10,000.00 | | 10,000.00 |
| Isaac E. Emerson Fund | 2,250.00 | 4,500.00 | 6,750.00 |
| Interest on Deposits | 104.74 | 146.76 | 251.50 |
| Duplicate Diplomas | 5.50 | | 5.50 |
| Petty Cash (Adjustment) | 79.62 | | 79.62 |
| Sundry Receipts | 562.55 | 14.85 | 577.40 |
| Discount Vouchers Payable | 34.60 | 21.76 | 56.36 |
| Total Receipts | \$98,076.49 | \$81,168.73 | \$179,245.22 |

EXPENDITURES

| | | | |
|--------------------------------|-------------|-------------|-------------|
| Salaries and Wages | \$47,968.28 | \$42,010.46 | \$89,978.74 |
| Central Office and Library | | 3,660.00 | 3,660.00 |
| General Repairs | 452.96 | 701.23 | 1,154.19 |
| Light, Heat, Power and Water | 430.33 | 539.27 | 969.60 |
| Traveling Expenses | 908.99 | 486.21 | 1,395.20 |
| Transportation | 211.78 | 227.36 | 439.14 |
| Communications | 422.28 | 390.93 | 813.21 |
| Other Expenses | 480.95 | 1,270.70 | 1,751.65 |
| Fuel | 437.55 | 312.05 | 749.60 |
| Office Supplies and Stationery | 297.11 | 428.44 | 725.55 |

TABLE IV. UNIVERSITY OF MARYLAND—SCHOOL OF PHARMACY—*Continued*
Statement of Receipts and Expenditures for Biennium Ending September 30, 1928

EXPENDITURES—*Continued*

| | Receipts 1926-1927 | Receipts 1927-1928 | Total for Biennium |
|--|-----------------------|-----------------------|-----------------------|
| Printing | 310.49 | 294.20 | 604.69 |
| Laboratory Supplies | 10,499.33 | 6,921.31 | 17,420.64 |
| Household, Laundry and Cleaning | 335.02 | 249.24 | 584.26 |
| Office Equipment | 499.47 | 185.85 | 685.32 |
| Laboratory Equipment | 4,767.24 | 727.96 | 5,495.20 |
| Educational, Vocational and Recreational Equipment | 270.32 | 644.83 | 915.15 |
| Rent | 2,187.54 | 1,823.12 | 4,010.66 |
| Insurance | 146.12 | 104.35 | 250.47 |
| *Isaac E. Emerson Fund | | 1,500.00 | 1,500.00 |
| Special Courses | | 818.64 | 818.64 |
| Improvements and Renewals | 8,119.52 | | 8,119.52 |
| New Building Plans | 25.00 | | 25.00 |
| Unpaid Bills, October 1, 1926 | 170.90 | | 170.90 |
| Total Expenditures | \$78,941.18 | \$63,296.15 | |

\$142,237.33

Cash Balance, September 30, 1928

Total Receipts for Biennium ending September 30, 1928

\$37,007.89

\$179,245.22
142,237.33

Total Expenditures for Biennium ending September 30, 1928

\$37,007.89

**Cash Balance for Biennium ending September 30, 1928

NOTE: Isaac E. Emerson Fund held in reserve

*Amount Expended as above

Balance as of September 30, 1928

\$6,750.00
1,500.00

**Cash Balance, September 30, 1928, includes student fees collected during and prior to month of September, applicable to year 1928-29

\$5,250.00

\$9,284.50

TABLE V. UNIVERSITY OF MARYLAND—SCHOOL OF LAW

Statement of Receipts and Expenditures for Biennium Ending September 30, 1928

RECEIPTS

| | Receipts 1926-1927 | Receipts 1927-1928 | Total for Biennium |
|--|-----------------------|-----------------------|-----------------------|
| Cash Balance, October 1, 1926..... | \$38,778.68 | | \$38,778.68 |
| Student Fees..... | 54,199.43 | \$41,041.00 | \$95,240.43 |
| State Appropriation Account Maintenance..... | | 36,000.00 | 36,000.00 |
| Interest on Deposits..... | | | |
| Petty Cash (Adjustment)..... | 349.62 | 244.27 | 593.89 |
| Transferred from Central Office and Library Account M. A. Goldring's Tuition..... | 29.62 | | 29.62 |
| Sundry Receipts..... | 25.00 | 300.00 | 300.00 |
| Discount Vouchers Payable..... | 17.09 | 54.17 | 25.00 |
| | | | 71.26 |
| Total Receipts..... | \$93,399.44 | \$77,639.44 | |

\$171,038.88

EXPENDITURES

| | | | |
|-----------------------------------|-------------|-------------|--------------|
| Salaries and Wages..... | \$57,745.21 | \$47,671.25 | \$105,416.46 |
| Central Office and Library..... | | 4,026.00 | 4,026.00 |
| General Repairs..... | 509.37 | 340.63 | 850.00 |
| Light, Heat, Power and Water..... | 296.69 | 313.51 | 610.20 |
| Traveling Expenses..... | 185.04 | 35.61 | 220.65 |
| Transportation..... | 88.83 | 128.28 | 217.11 |
| Communications..... | 501.28 | 412.39 | 913.67 |

TABLE V. UNIVERSITY OF MARYLAND—SCHOOL OF LAW—Continued
Statement of Receipts and Expenditures for Biennium Ending September 30, 1928

EXPENDITURES—Continued

| | Receipts 1926-1927 | Receipts 1927-1928 | Total for Biennium |
|--|-----------------------|-----------------------|-----------------------|
| Other Expenses | 2,479.20 | 1,559.59 | 4,038.79 |
| Fuel | 401.21 | 312.05 | 713.26 |
| Office Supplies and Stationery | 213.00 | 353.30 | 566.30 |
| Printing | 629.66 | 450.94 | 1,080.60 |
| Household Laundry and Cleaning | 196.39 | 185.15 | 381.54 |
| Office Equipment | 424.69 | 250.55 | 675.24 |
| Educational, Vocational and Recreational Equipment | 1,676.67 | 2,309.29 | 3,985.96 |
| Insurance | 116.49 | 56.55 | 173.04 |
| Improvements and Renewals | 89.60 | ..... | 89.60 |
| New Building Plans | 25.00 | ..... | 25.00 |
| Unpaid Bills, October 1, 1926 | 222.54 | ..... | 222.54 |
| Total Receipts | \$65,800.87 | \$58,405.09 | \$124,205.96 |

Cash Balance September 30, 1928

Total Receipts for Biennium ending September 30, 1928

Total Expenditures for Biennium ending September 30, 1928

*Cash Balance for Biennium ending September 30, 1928

*Cash Balance, September 30, 1928, includes Student Fees collected during and prior to September, applicable to the year 1928-29

\$171,038.88
124,205.96
\$46,832.92
\$46,832.92
\$16,647.50

TABLE VI. UNIVERSITY OF MARYLAND—SCHOOL OF BUSINESS ADMINISTRATION
Statement of Receipts and Expenditures for Biennium Ending September 30, 1928

EXPENDITURES

| | | | |
|-------------------------------|-----------------------|-----------------------|-----------------------|
| Student Fees | Receipts 1926-1927 | Receipts 1927-1928 | Total for Biennium |
| Petty Cash (Adjustment) | \$150.00 | \$192.00 | \$342.00 |
| | 100.00 | | 100.00 |
| Total Receipts | \$250.00 | \$192.00 | \$442.00 |

EXPENDITURES

| | | | |
|---|---------|---------|----------|
| Other Expenses | \$38.77 | \$12.25 | |
| Total Expenditures | \$38.77 | \$12.25 | \$51.02 |
| Cash Balance, September 30, 1928 | | | \$390.98 |
| Total Receipts for Biennium ending September 30, 1928 | | | \$442.00 |
| Total Expenditures for Biennium ending September 30, 1928 | | | 51.02 |
| Cash Balance for Biennium ending September 30, 1928 | | | \$390.98 |

NOTE: The School of Business Administration, under contract with Johns Hopkins University, effective in June, 1926, was discontinued by the University of Maryland. Under stipulations in said contract certain of the former students then enrolled, on the completion of work required at the Johns Hopkins University and so

certified by that institution, became eligible for Certificates and Degrees to be conferred by the University of Maryland.
The plan thus entered into extended from June, 1926, to June, 1930, hence the need for continuing this account.

TABLE VII. UNIVERSITY OF MARYLAND—CENTRAL OFFICE AND LIBRARY

Statement of Receipts and Expenditures from October 1, 1927, to September 30, 1928

RECEIPTS

| | |
|--|-------------|
| State Appropriation | \$20,000.00 |
| Transferred from School of Medicine | 6,039.00 |
| Transferred from School of Dentistry | 4,575.00 |
| Transferred from School of Pharmacy | 3,660.00 |
| Transferred from School of Law | 4,026.00 |

Total Receipts (September 30, 1928)

\$38,300.00

EXPENDITURES

| | |
|---|-------------|
| Salaries and Wages | \$35,138.99 |
| General Repairs | 8.45 |
| Traveling Expenses | 16.76 |
| Communications | 230.66 |
| Other Expenses | 8.82 |
| Office Supplies and Stationery | 382.92 |
| Printing | 181.25 |
| Office Equipment | 151.00 |
| Insurance | 354.52 |
| Household, Laundry and Cleaning | 3.40 |
| Transferred to School of Law Account M. A. Goldring's Tuition | 300.00 |
| Special Administrative Expenses | 1,205.30 |

Total Expenditures (September 30, 1928)

\$37,982.07

Cash Balance (September 30, 1928)

\$317.93

Total Receipts (September 30, 1928)

\$38,300.00

Total Expenditures (September 30, 1928)

37,982.07

Cash Balance (September 30, 1928)

\$317.93

NOTE: It will be noted that this statement is only for the year 1927-1928. Prior to this the Central Office and Library did not receive a State Appropriation. Therefore, all expenditures for

the General Office and Library were charged on a professional basis to the several schools.

UNIVERSITY OF MARYLAND

OFFICIAL PUBLICATION

Vol. 27

December, 1930

No. 12

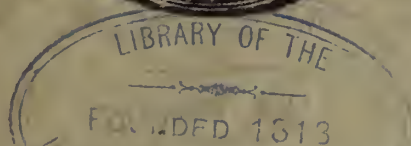
BIENNIAL REPORT

of the

UNIVERSITY OF MARYLAND

and

STATE BOARD OF AGRICULTURE



UNIVERSITY OF MARYLAND

OFFICIAL PUBLICATION

Vol. 27

December, 1930

No. 12

BIENNIAL REPORT

of the

UNIVERSITY OF MARYLAND

and

STATE BOARD OF AGRICULTURE

Including a summary of the work and needs of the University of Maryland, the Agricultural Experiment Station, the Extension Service, the State Board of Agriculture, and other branches of work under the jurisdiction of the University and State Board of Agriculture.



Issued monthly by the University of Maryland at College Park, Md. Entered as second class matter under Act of Congress of August 24, 1912.

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LETTERS OF TRANSMITTAL

*His Excellency, Governor Albert C. Ritchie,
and the General Assembly of Maryland,
Annapolis, Maryland.*

Sir and Gentlemen: The Board of Regents of the University of Maryland and the Maryland State Board of Agriculture herewith render a report of the work of the several departments under their jurisdiction for the last three years.

Very truly yours,

SAMUEL M. SHOEMAKER,

*Chairman, Board of Regents of the University of Maryland and the
State Board of Agriculture.*

December 30, 1930.

*Hon. Samuel M. Shoemaker,
Chairman, Board of Regents of the University of Maryland
and of the Maryland State Board of Agriculture.*

Sir: Herewith I am submitting a brief report of the work of the University of Maryland, the Maryland State Board of Agriculture, the Agricultural Experiment Station, Extension Service, and the other branches of work under the two Boards for the last three years. A statement showing the financial status of the University and the State Board of Agriculture is appended. I am also submitting a short statement of the various funds other than State appropriations used for the support of the University.

Very truly,

R. A. PEARSON,

President and Executive Officer.

December 30, 1930.

BOARD OF REGENTS

| | |
|------------------------------------|-----------|
| SAMUEL M. SHOEMAKER, Chairman..... | 1924-1933 |
| JOHN M. DENNIS, Treasurer..... | 1923-1932 |
| HENRY HOLZAPFEL, JR..... | 1925-1934 |
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| DR. W. W. SKINNER, Secretary..... | 1927-1936 |
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UNIVERSITY AND EDUCATIONAL WORK

DR. FRANK J. GOODNOW, Chairman
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The President's Statement

To the Chairman and Members of the Board of Regents:

Gentlemen:

I have the honor to submit report for the biennium ending September 30, 1930.

The service, accomplishments and needs of the University of Maryland and the State Board of Agriculture are enumerated briefly in the reports from the chief executive officers of the main divisions of the work. These reports will be found on the following pages. I desire to call your attention to a few special items.

Instruction: The standards of instruction in Baltimore and in College Park have been maintained and numerous improvements effected during the biennium. Many evidences of recent advances in the quality of instruction may be found, such as the establishment at College Park of chapters of two national honor societies, Sigma Xi and Tau Beta Pi, and the classification of the Schools of Dentistry and Law in Baltimore as "A" Grade.

The honor societies mentioned do not place their chapters in an institution without first making a critical examination of the efficiency of teaching and finding to their satisfaction that high standards are observed. Neither do the national organizations that are recognized as capable of rating professional schools assign the highest rating to any school until they are satisfied that high teaching standards are maintained. To a large extent, also, the character of research work influence their actions. The chapter of Sigma Xi (established in the preceding biennium) indicates good work in the various sciences. Similarly, the presence of Tau Beta Pi reflects the quality of work in an engineering college. The schools of Medicine, Law, Dentistry and Pharmacy in Baltimore and the five colleges in College Park now are officially recognized as in the highest class.

The completion of the new Library Building in a few months at College Park will be a notable event in the history of the institution. The facilities of the library will give a great impetus to every line of instruction and research on that campus.

Many suggestions regarding the organization of courses and methods of instruction in universities are heard. There are also many methods of effecting improvements. The universities of the country are studying these problems all the time. Sometimes a start is made that results in failure, and again new things are learned. In some instances considerable publicity has been given to an experiment. The

University of Maryland is endeavoring in a quiet way to find the best that is developed anywhere and which is applicable to the needs of this institution and this state. It is realized that a great many young men and women waste much time before they find what they want in a university. It is believed that gradually a system of instruction is being perfected in this university by which students may more quickly find what they want and be assisted in selecting the right subjects and sequence for their particular needs.

Faculty: The quality of instruction and research, of course, depends upon the faculty. Some valued teachers have been lost because of better inducements elsewhere. It is believed, however, that the quality of instruction in the institution as a whole is being improved steadily. When older and experienced members of the staff resign, it is the policy to make every effort to find young men of promise who are available at lower salaries and who in due time will be able to command high salaries. Obviously it will be impossible to hold such staff members very long unless the salary and other inducements at this university make favorable comparison with elsewhere. At the present time the salary level is lower than in many states comparable with Maryland. Besides this, some of those other states are providing retirement pensions and sabbatic leaves which are not yet provided in this state. And, still further, there are numerous other states that are more generous than we can be in providing for graduate students and assistants whose presence means much in relieving drudgery and toil on the part of department heads and other leading faculty members. It is hoped that the University of Maryland will be able to provide in the near future such benefits as have been mentioned for members of the staff.

Students: Enrollment is increasing in practically all branches of the university, and this is in spite of the fact that entrance requirements are being raised and better work is being required for a student to remain in the university. The development of the high schools of the state is the factor chiefly responsible for the growing enrollment in the university. There are many withdrawals of students in the lower classes at the end of the first semester. The chief reason is lack of suitable preparation before entering the university.

In the last few years the policy has been adopted of admitting students who have made especially good records in the high schools and are recommended by their respective principals. A limited number of other Maryland students who are not recommended are accepted on probation. These latter are high school graduates and are admitted to the university only after careful investigation of their records. To the surprise of those who are not familiar with students records, a very large proportion of this latter class is doing as well in college as those in the former group. And doubtless they will do as well in

after life. This is an interesting comment on college admissions and it suggests possibilities of immense interest and importance.

Scope of Work: The effort is to restrict, rather than to extend, the scope of work. It is more desirable to excel in a limited number of lines than to do work of second or third quality in many lines. And so it happens that some important subjects are developed only far enough to comply with the requirements of the various courses of study; and some other topics which are dignified by having a separate college organization in many other universities are not found in the University of Maryland.

The scope, however, is broadening from time to time by reason of necessity. For example, a year ago the state organization of volunteer firemen made an urgent request for a short course of instruction. They pointed out the elaborate work offered to volunteer firemen in some other state universities and what it would mean to Maryland to have better instruction. The Board of Regents approved the request and the faculty provided special instruction for the period of one week. It was a highly successful effort. So also it happens that there have been enlargements in the extension work and in some other lines. But all these have been few as compared with the number of requests and suggestions that are received from citizens and taxpayers.

Research and Extension: The public now appreciates much better than a few years ago the necessity of research and the great benefits of Extension teaching. Both of these subjects are discussed at length elsewhere.

Board of Agriculture: The work of the Board is immensely important to the farmers of the state and to the public generally. It is reported in detail elsewhere.

Finances: The reports from the financial officers show that the biennium closed without any deficit. In order to make this record many expenditures for desirable improvements were postponed. This relates particularly to equipment. The sum of \$100,000 is greatly needed to provide reasonably up-to-date and satisfactory equipment for numerous departments of the university which have been denied for many years what they greatly need.

Funds provided by the State constitute a very small part of the total used for the support of instruction in the Baltimore Schools. Most of the funds for this purpose are derived from tuition payments. At College Park the State appropriates an average of about \$200 a year for each student in attendance. Ten years ago the amount was in excess of \$300. Far better work could be rendered if more funds were provided. Already the fees charged students at College Park are high as compared with fees charged in similar institutions in

nearby states. It would be a severe handicap for many students if these fees were increased.

Apparently the question soon will have to be considered as to whether enrollment will be restricted or fees collected from students shall be increased, unless the State appropriation per student can be increased. This question brings up the theory of the National Land Grant Act of 1862 and the purpose of this State in accepting its terms. It was the intention of Congress to provide education in the great industries that would be comparable with education provided for the professions, and to make such education available to large numbers of people.

Detailed statements of costs of instruction in the different departments of the university at College Park have been made for two years and another such study is now in progress. These figures show wide variation as between departments, depending upon the number of students, the necessary payments to teachers, the cost of equipment, size of classes, etc. Within another year or two there should be data of great value for comparative purposes. Already some benefits have been secured.

Buildings: The building needs of the university have been cared for generously in recent years, but much remains to be done to house the present organization satisfactorily. The first need is a hospital in Baltimore at a total estimated cost of about \$2,000,000. The present structure is a serious fire hazard, out of date and inadequate. The need of the hospital has been given special emphasis in the recent report of the Commission on Higher Education appointed by the Governor.

Additional building space is needed urgently at College Park for Arts and Science, Education and Engineering, besides an auditorium, a building for student social activities, additional dormitories, and a girls' gymnasium. Additional land also is greatly needed for agricultural instruction and research.

In Baltimore, after the hospital, there is need for a Medical Library and for certain library services to the Schools of Pharmacy and Dentistry. Also there is needed an addition to the Nurses' Home.

Under the direction of the Board's Committee on Campus Developments, an outstanding landscape architect has been engaged to study the campus at College Park. He is making a model of the campus and present permanent buildings and showing locations of future buildings. After this model has been officially approved there should be no delay or extended discussions as to locations of important buildings for a long period of years.

The improvement afforded by the paving of driveways on the campus is greatly appreciated by those who are using the campus and is often praised by alumni and others who were familiar with the

conditions in earlier days. A start has been made on planting trees and shrubbery, but the extreme drought has had a bad effect on this work. It should be carried on conservatively for a number of years.

In Conclusion: The extent to which a state university may be developed depends upon what can be provided in the tax budget. For the support of the education work in the entire university, the average person in Maryland is now paying about 23 cents per year, according to statistics collected by the U. S. Office of Education. Except in Massachusetts, where the population per square mile is very dense, the amount is greater in all of the other states reported. In many cases it exceeds \$1.00 per capita.

Whatever the appropriation may be and whether enrollment of students is curtailed or not, the efforts of the administration always will be to secure the largest possible benefit from every dollar expended. It is realized that the quality of students turned out of the university is far more important than numbers. It will be the aim to maintain quality even if the numbers should be restricted.

Respectfully submitted,

R. A. PEARSON,
President.

Student Life

Student life on the campus, in the fraternities, and in private boarding houses, although subject in recent years to rapidly changing conditions and many varied difficulties, has progressed to a stage where it now seems to be eminently satisfactory. In the management of any group of fifteen hundred men and women, it is to be expected that difficulties and problems will be encountered, but, even in consideration of this, the situation in regard to student life is very good, and apparently on a much better basis than in most other universities.

About 28 per cent of the students live in the dormitories; about 24 per cent in fraternity houses, and the other 48 per cent in private boarding houses and their own homes. Probably the most unsatisfactory conditions the university has had to overcome is the lack of sufficient dormitories for girls. However, this should be rectified within the next year or eighteen months, with the construction of two new dormitories for girls, provided for by the Legislature.

The dormitories for men are overcrowded and as soon as possible this condition should be relieved.

The management of the dormitories has been both efficient and economical, although the dormitories for girls have necessitated a much higher per student cost than is reasonable, largely because of their inadequacy and locations.

In physical training and athletics, the university has worked out a sound plan, now in operation, which needs only additional funds to make it entirely comprehensive. No figures have been compiled for the current year but last year more than 70 per cent of the total number of students took part in some form of supervised physical training. This is an unusually large percentage to be so engaged.

The work in physical training is closely allied with the general health program of the campus, and the program for the future involves probably the most comprehensive system in the country. It is proposed to have a general Department of Health which will have as its subdivisions general physical training, including intramural athletics, open to all students; the general health work, including medical attention, examinations, and nursing, and the clinical duties of the infirmary; and intercollegiate athletics.

This general department will dovetail into the College of Education so that teachers fitted for this type of work, who graduate from that College may go out to the high schools with a knowledge of the management and coaching of inter-high school sports, of general physical education to reach all students, and also with a knowledge which

should enable them to help develop a general health program for both high school and community, particularly such a program as would relate to personal hygiene and health, community sanitation, and recreational welfare.

For the first time in the history of the university, the method of handling financial accounts of student organizations is on a very satisfactory basis. Many difficulties in this connection have risen in past years and the new system put into effect last fall, with the co-operation of the State Auditing Department, seems to have produced remarkable results. These funds are not, of course, State funds but by handling them in a business-like way the students get valuable experience in business procedure. The handling of funds in this way also minimizes the possibility of criticism. The student organizations have co-operated splendidly in putting the new system into effect and more and more each day realize the values to be derived therefrom.

Withdrawals of students from the university have hardly run any higher than in any other universities of comparable size. Some students withdraw because of lack of finances, others because of poor health and for other varied reasons, but the great cause of student casualties lies either in inability, or failure, to do the quality of work that measures up to the high standards required.

Student activities generally cover a broad range but are fostered by the university as a part of its educational program, aiming to give various groups opportunities for recreational mental diversions in fields to which they are most adapted. The varied nature of these may be recognized by mentioning the diversity between, for instance, the Opera Club, the Chess Club, the Dramatic Club, the Engineering Society, the Spanish-American Club, the Women's Senior Honor Society, and so on.

Student conduct in general, while not perfect by any means, is satisfactory. At least, the university does not seem to be afflicted in this respect with some of the difficulties that apparently are causing considerable trouble on the campuses of other institutions.

In making this brief statement about the student body, it seems appropriate to mention briefly the developments among the alumni group. A full time secretary has been added to the administrative forces of the university. This has resulted in giving the alumni information and aid much more consistently and frequently than in previous years.

A monthly publication, known as "The Alumni News," also has been established and is reaching all graduates of the College Park branch of the university. The Alumnus Secretary has been active during the current year in forming alumni groups in various localities. This work has met with considerable success and is extending the influence and prestige of the university.

H. C. BYRD,
Assistant to the President.

The College of Agriculture

To the President of the University:

The College of Agriculture is organized in twelve separate departments. Each department conducts research and extension projects in addition to regular class work instruction.

Some of the departments listed below include more than one phase of work, and these might properly be called divisions. The departments are as follows:

1. Agricultural Economics.
2. Agricultural Engineering.
3. Agronomy—Crops and Soils.
4. Animal and Dairy Husbandry.
5. Animal Pathology, Bacteriology and Veterinary.
6. Botany and Plant Pathology.
7. Farm Forestry.
8. Farm Management.
9. Entomology and Apiculture.
10. Horticulture—Pomology, Olericulture, Floriculture, Landscape Architecture.
11. Plant Physiology.
12. Poultry Husbandry.

The increase in enrollment in the College of Agriculture noted in the last biennial report continues at about the same steady rate. The final figure for the year 1928-29 was 141, while for the year 1929-30 it was 154. For the first semester of 1930-31 the corresponding figure was 164. However, an enumeration of the students regularly enrolled in the College of Agriculture does not give a complete picture of the education of students in agricultural subjects at the university. In addition to those in the Agricultural College, some of the students in Agricultural Education are enrolled in the College of Education. Also, an indication of the number of graduate students who specialize in subjects within the field of activities of the Agricultural College is brought out by the fact that the agricultural faculty carries a teaching load of graduate work approximately twenty per cent as heavy, when measured in student-hours of work, as the teaching load that it carries for undergraduate agricultural students. It seems to be evident, therefore, that any true picture of the enrollment of students interested in Agriculture would include these students enrolled in the Education College or in the Graduate School.

Occupations of Graduates:

The following table shows the disposition of the 24 agricultural graduates from the class of 1930:

| Present Occupation | Number | Per Cent |
|--|--------|----------|
| Graduate work..... | 4 | 17 |
| College and U. S. Research..... | 3 | 13 |
| High School Teaching..... | 2 | 9 |
| Farming and Floricultural Practice..... | 7 | 30 |
| Industries related to Agriculture..... | 3 | 13 |
| Business not related to Agriculture..... | 2 | 9 |
| Unemployed | 2 | 9 |
| Unknown | 1 | |

In addition, four graduates in Agricultural Education from the College of Education are teaching in high schools.

Figures in the foregoing table indicate that the present business depression has reduced the number of opportunities for positions in the industries related to Agriculture, while the number of graduates who engage in farming remains relatively unchanged.

The following table shows the number of male Freshmen in the class entering the University in 1929 for whom the occupation of the father is listed as "farmer", or "retired farmer":

MALE FRESHMEN

| College | Total | From the Farm | |
|------------------------|-------|---------------|----------|
| | | Number | Per Cent |
| Agriculture..... | 53 | 22 | 41 |
| Arts and Sciences..... | 151 | 10 | 8— |
| Engineering..... | 91 | 7 | |
| Education..... | 6 | 2 | |

The foregoing figures indicate that relatively few farm boys come to the University, yet those who do enter usually select the Agricultural College for their training.

It is evident also that the proportion of agricultural graduates who return to farming is not markedly smaller than the proportion of agricultural freshmen who originate on the farm. Apparently the College of Agriculture continues as the important agency for returning trained leadership to rural communities.

Much consideration has been given during the past two years to the courses offered in this college.

The study of courses has been approached with the thought of endeavoring to adapt the courses to the types of farming in which students will desire to major and also have courses so arranged that they will suit different types of minds and help students to find themselves and become adjusted to their college work.

It is well recognized that the student who plans to take up teaching and research needs a different training from the one who plans to farm or take up commercial work. However, all courses leading to degrees must have equivalent value and credits. Encouraging progress has been made in adjusting the programs of study so that they are adapted to the types of occupation which the graduates desire to enter.

The demand for short courses and the special two-year course in farming was not sufficient to justify their continuance. The Extension and High School agricultural courses, in a large measure, supply the demand for the short and special courses.

There are a number of special students in the College of Agriculture who desire some particular work and who are not entered for credits. These special students are usually mature and know definitely what they want and the system of electives permitted is supplying the need and proving mutually satisfactory.

This University is favorably located for conducting graduate work. This is particularly true of graduate work in Horticulture and the closely allied sciences. An arrangement of the graduate courses on a quarter basis would prove a convenience to many. The quarter basis would also make it easier in some instances to co-ordinate the laboratory and field work. The University should emphasize and make its graduate work particularly strong in a few lines, so as to be well known and attract many outstanding students in these special fields.

Many of the departments need more space for both teaching and research and some of the scattered departments could do their work more efficiently and economically if brought together. The contemplated removal of some departments from the Agricultural Building will give an opportunity to carry out some of these suggestions. The new Horticultural Building which is provided for will add much to the research facilities for this department. More space and special facilities will be needed very soon for Forestry, Entomology, Agricultural Engineering, Farm Management and Animal Husbandry.

Most of the departments have adopted a policy of adding some piece of permanent apparatus or equipment each year as their budget and circumstances will permit. As a consequence of this policy the facilities for instruction are constantly improving. During the past two years the Soils and Crops Laboratories have been moved to new quarters and equipped with additional laboratory tables and heat and cold storage facilities. New microscopes have been added for Botany,

Entomology and Bacteriology. A new laboratory has been equipped for Plant Physiology. Several calculating machines, file cases and other equipment has been added for Statistics and Agricultural Economics. New projection apparatus and other facilities have been purchased for Animal and Dairy Husbandry teaching. Much more scientific apparatus and equipment is needed to maintain the standard desired, to replace apparatus which is worn out or which becomes obsolete. A special increase in the budget is necessary to meet these conditions.

The students of the College of Agriculture maintain a Student Grange, a Horticultural Club, a Live Stock Club and an honor fraternity, Alpha Zeta.

Membership and work in these is voluntary and no college credits are given for work done in them; yet much of the training obtained thereby is fully as valuable as that got from regularly prescribed courses.

The Student Grange represents the great national farmers' fraternity of the Order of Patrons of Husbandry, and in their work they emphasize "Training for Rural Leadership." They sponsor much deputation work in local granges throughout the State. The Horticultural Club sponsors the Horticultural Show in the fall, and the Live Stock Club the Fitting and Showing Contest in the spring. Both these exhibitions are very creditable and worthwhile University functions. They give valuable training and inspiration to the students.

Membership in Alpha Zeta Fraternity is chosen from the students in the College of Agriculture after an earnest agricultural motive and executive ability has been demonstrated. This national organization fosters good scholarship and to that end awards a gold medal to the member of the Freshman class in agriculture who makes the highest record during the year.

Respectfully,

H. J. PATTERSON,
Director and Dean.

The Agricultural Experiment Station

To the President of the University:

The program and progress of the work of the Experiment Station for this biennium has been given in detail in the 42nd and 43rd annual reports already published and distributed. These years have been marked by progress, growth and development in most of the departments and sections. The broad scope and character of the Station's work is shown by the list of projects given in detail in these annual reports. Inactive projects have been eliminated; many of the active ones reorganized and revised; and some new ones added. The Station's program and policy as shown by the list of projects indicates that they are closely related to the Maryland farmers' occupation, life and every day problems, but also that basic scientific studies are receiving attention. As fast as results, which are useful, are obtained reports are made either through bulletins, journals or the popular press. Applications for these reports and inquiries on agricultural subjects give evidence that many people appreciate the work of the Experiment Station and are looking to it as a help and guide in their work. There is, however, a need for the development of other channels and means for the distribution of the results so as to have them reach and made available to more people. To do this effectively will necessitate a class of publicity which calls for the expenditure of more money than is available at present for such purposes.

The seasons of 1929 and 1930 were abnormal and caused some experiments to yield no results. The precipitation for 1930 was the lowest on record for most parts of Maryland. In many instances the crops perished and were entire failures. Nevertheless, the yields per acre of the small grains, wheat, rye, winter barley and oats in 1930 were considerably above normal. These increased yields, though in the main due to favorable weather conditions, are in part due to the results of this Station's work in developing strains and varieties suited to the different soils and sections of this State.

The Station's accomplishments in the past are yielding annually much more in money value than the total cost of the work; besides contributing much to the improved standards of living, contentment and happiness of farm life. Most of the real, lasting and substantial advancements made in farming during the past forty years can be traced to the results of research.

In times of stress such as now confronts farming, greater effort and more money should be expended on research. This is the policy followed by many industries and should be adopted for agriculture.

Some farm problems should receive special attention at this time. For instance:

Maryland devotes about 900,000 acres to pastures and hay grass crops, and these should be yielding double the amount of food they are. More information is needed as to the grasses suited to different soils and climatic conditions and the fertilization and care they require. The future of producing milk and meat economically depends on an abundance of nutritious grass crops. Grasses are the outstanding agencies for land utilization and conservation.

Weeds are exacting a heavy tax on Maryland farmers. Much more knowledge is needed regarding them and their control.

Investigation of fur animals, forestry management, aquatic plants in relation to fish, oysters are needed. Social, economic and marketing problems in relation to rural life all call for further study. Work on these and many other important problems in the manner they merit calls for more facilities. Their solution will yield big dividends on the investment.

The Experiment Station research work is maintained by Federal and State appropriations, the Federal Government contributing more than the State. The federal acts outline the duties and functions of the Station. The use of the money is more or less circumscribed. Details as to receipts and expenditures will be found in the annual reports of the Station.

The following statement gives the relative amount expended for different phases of work:

| | |
|------------------------------------|--------|
| General overhead..... | 15.1% |
| Administration | 5.0% |
| Agronomy | 20.0% |
| Horticulture | 17.0% |
| Animal and Dairy Husbandry..... | 14.7% |
| Animal Pathology and Diseases..... | 3.0% |
| Poultry Husbandry..... | 9.3% |
| Botany and Plant Diseases..... | 2.4% |
| Plant Physiology..... | 5.6% |
| Entomology | 4.0% |
| Home Economics research..... | 1.7% |
| Ridgely Farm | 2.2% |
| Total..... | 100.0% |

During this biennium the Station has issued 21 bulletins and 2 annual reports covering a total of 837 pages; and also has contributed 71 papers to scientific meetings and journals. These represent the tangible contributions made by the Experiment Station but only in part its many activities as reference to the annual reports will show.

The following are the titles and brief summaries of the bulletins issued during this biennium:

Bulletin 299—Pruning and Rejuvenating Peach Orchards, contributed by the Horticultural Department—35 illustrations. The light pruning of peach trees gave better yields and quality of fruit than heavy or severe pruning. In the rejuvenation of an old orchard moderately heavy cutting back into three and four year wood, leaving the main limbs 6 ft. to 8 ft. long proved best.

Bulletin 300—Potash from Industrial Alcohol, contributed by the University Department of Chemistry. This is known as "Vegetable Potash." It is a mixture of sulphate, muriate and carbonate of potash. It is a very valuable fertilizer.

Bulletin 301—The Manufacture and Distribution of Canned Tomatoes, Corn and Peas in Maryland, contributed by the Department of Agricultural Economics—25 illustrations, maps and graphs. This report represents a study of three years' operations of the canning industry. The results show considerable range in the cost of canning products in different factories. For satisfactory results the growers should deliver a good quality of product to the cannery so that a standard and high quality of canned food can be produced. Many canneries should adopt a better and sounder system of financing; reduce the number of brands and simplify labeling; keep more adequate cost records; have a better utilization of by-products; and improve their methods of sale and distribution. The canning industry would profit by more cooperation and closer contact with their association activities and with the agencies furnishing general and market information.

Bulletin 302—The Relation of Mosaic Disease on Yield and Quality of Tobacco, Investigations in cooperation with the U. S. Department of Agriculture, Tobacco Laboratory. This disease is widely prevalent in Maryland. The results show that it can be carried by the laborer from the cured crop to the plant bed or the field. The disease reduces yield and lowers quality. The earlier the infection takes place in the plant the greater the injury. Soil in the seed bed, frames and plant bed cloth should be sterilized. Great care should be exercised by all workmen to prevent distributing the disease.

Bulletin 303—The Shrinkage of Potatoes in Storage, contribution from the Department of Plant Physiology—4 illustrations. The shrinkage is due mostly to a loss of water (transpiration) and to a small extent to the destruction of carbohydrates (respiration). The shrinkage was greater and more rapid in immature than in mature potatoes. The shrinkage in the early stages of storage was greatest at the lower temperatures.

Bulletin 304—The Cost of Producing Tomatoes in Maryland for the Cannery, contribution from the Department of Agricultural Eco-

nomics—14 illustrations. This study represents three consecutive years, 3,579 acres on 553 farms, or a total of about 3% of the acreage in this State. The average cost of producing an acre of tomatoes in the Eastern Shore area was \$54.80 and in Harford County was \$80.72. The cost per ton in the Eastern Shore area was \$11.87 and in Harford County \$10.28. The average net income per acre for the Eastern Shore area was \$15.50 and for Harford County was \$34.61.

Bulletin 305—The cost of Producing Sweet Corn and Peas for Canning, contribution from the Department of Agricultural Economics—22 illustrations. This study covered three years and represented nearly 4% of the total area in sweet corn and nearly 8% of the total area in peas. The average cost of producing sweet corn was \$31.59 per acre, or \$13.05 per ton. The cost per ton varied on different farms from \$4.62 to \$112.34. The average net income per acre was \$1.23. The three year average cost of producing peas was \$43.97 per acre or \$40.93 per ton. The net income was \$21.26 per acre. Recommendations are made as to fertilization and other practices for producing economically.

Bulletin 306—Factors Influencing Yield and Quality of Peas, contribution from Horticultural Department. Good yields depend upon early planting; soils high in organic matter; nodule formation and liberal fertilization (about 400 lbs. of 5-8-3 to 7-6-5). The yields decreased rapidly with successive late plantings. The quality depends upon early planting and harvesting promptly. Delay in harvesting any planting causes a rapid decrease in sugar and increase in starch which gives a lower quality.

Bulletin 307—Varieties of Spinach for Canning, contribution from Horticultural Department—3 illustrations. There were thirteen varieties and four groups of spinach used in this study. Records were made on yields, disease resistance, hardiness and canning qualities, conclusions summarized in 19 points. As a rule the Smooth Leaved sorts gave best yields and were most desirable for canning. Virginia Savoy gave best yield in the fall because of its blight resisting qualities. It also gave a good quality of canned product.

Bulletin 308—Insecticidal Value of Pyrethrum Soaps, contribution from Department of Entomology. Pyrethrum is prepared in a variety of forms and has become of considerable importance as an insecticide. The use of Pyrethrum soap was tested on a number of kinds of Aphids, White fly, Mealy bug, Mexican bean beetle, Asparagus beetle, Elm leaf beetle, Squash ladybird, Cucumber beetle, Fall webworm, German cockroach, Stable flies and Mosquito larvae. It proved to be toxic to all of these insects. The strength needed varied with different insects. Its use was economical with all but the Mealy bug and Mosquito larvae.

Bulletin 309—Fertilizers and Manure for Vegetable Production, contribution from Horticultural Department. Comparisons were made of the use of stable manure, commercial fertilizers and combinations of them. The tests covered a period of 13 years. The largest yields were obtained with combinations of manure and commercial fertilizers. The greatest net profit was obtained with crop refuse and commercial fertilizers. The net return would vary greatly with prices paid for products.

Bulletin 310—Insecticidal Properties of Sulfonated Oxidation Products of Petroleum, contribution from the Department of Entomology. This study was conducted in cooperation with the Crop Protection Institute. Penetrol is the name used to designate the product. The material proved valuable to control Aphids when used alone and still more effective when combined with nicotine. Foliage showed no injury even when the strength of the spray was stronger than necessary to kill the insects.

Bulletin 311—A study of Fertilizers for Sweet Potatoes, contribution from Horticultural Department—9 illustrations. The tests covered a period of five years. Potash was the most important plant food in increasing yields. A combination of potash and nitrogen gave the highest yield. Lime proved very beneficial. Strongly acid soils were unfavorable to good yields. A section of the bulletin discusses varieties, propagation, cultural methods, disease control, harvesting, storage, grading and marketing of sweet potatoes.

Bulletin 312—Varieties of Spinach, contribution from Horticultural Department—19 illustrations. The study was made on 13 varieties from American Seedsmen and 32 varieties from Holland. They divided into two types, namely, (1) The Flat Leaved type; (2) The Savoy or Crumpled leaved type. Each of these types were divided into three groups, namely, Short season; Long standing and Slow growing. The variety selected depends on the time of planting and market demand. Usually for fall planting the Virginia Savoy proves best and for spring a slow growing long standing sort, such as King of Denmark.

Bulletin 313—Fall Planted Cabbage, contribution from Horticultural Department—14 illustrations and 5 graphs. A study of the factors which cause fall planted cabbage to shoot flowers instead of making heads. It covered three years' work. Sowing seed too early and heavy fertilization of plant bed producing a large plant is undesirable and favored winter killing and flower formation in the spring. Plant seed as late as possible to get plants with stems about $\frac{3}{16}$ to $\frac{1}{4}$ inch in diameter.

Bulletin 314—Fertilizing Asparagus, contribution from Horticultural Department. This crop is increasing in acreage and importance in Maryland. It grows well in a variety of soils. The experiments covered 9 years. Asparagus requires liberal fertilization. A 7-3-5

commercial fertilizer at the rate of 1,250 lbs. per acre gave the best results. The commercial fertilizer gave better yields than 10 tons of stable manure per acre. As a rule applications of fertilizer in the spring were better than summer applications, but the average results were not very different. Application of 400 lbs. Kainit per acre in summer proved valuable and is recommended rather than salt.

Bulletin 315—The Production and Marketing of Strawberries on the Eastern Shore of Maryland, cooperative contribution from the Horticultural and Agricultural Economics Departments—14 illustrations. The survey was made in 1928. The data was gotten in three different areas from 91 growers. The principal varieties grown were Missionary, Gandy, Premier and Chesapeake. The average cost of producing and marketing was \$2.76 per crate. This cost varied with yields obtained. Most of the berries were sold by auction and this method of selling seems to be advantageous. Prices are influenced by quality. Quality can often be improved by better methods of picking and handling. Most of the berries in the areas studied are sent to market by motor trucks.

Bulletin 316—Ground and Unground Soybean Hay for Cows, contribution from the Dairy Husbandry Department. There was less waste in feeding ground hay and the cows produced more milk and fat when fed the ground hay, but the increases were not sufficient to pay the cost of grinding. It cost \$6.35 per ton to grind the hay.

Bulletin 317—Test of Potato Seed from Various Sources, contribution from Department of Plant Pathology—2 illustrations. The tests covered a period of 5 years. The highest average yield was 265 bushels per acre obtained from Northern grown certified seed. The next highest average yield was 220 bushels per acre obtained from Maryland and Virginia mountain grown certified seed. Fall grown certified seed ranked third with 209 bushels per acre. Uncertified seed gave only 186 bushels per acre. Seed which comes up quickest and matures earliest is usually the most vigorous, healthy and productive.

Bulletin 318—Varieties of Tomatoes for Canning, contribution from Horticultural Department—6 graphs. The tests covered three years. For many years Maryland ranked first in the production of tomatoes for canning—now it stands fourth.

The variety Marglobe proved to be the best for the Coastal Plain Region. It gave the best yields and packed the most cases per ton. It is also resistant to the tomato (*Fusarium*) wilt. It had the longest harvesting season. Tomatoes belonging to the Greater Baltimore group gave the best yields in the Piedmont region.

Bulletin 319—Calf Feeding Investigations, contribution from the Dairy Husbandry Department—7 illustrations. A comparison was made of raising calves on a nurse cow, whole milk, remade skim milk (powder) and Maryland Calf meal. There were four calves in each

lot. Vigorous calves can be weaned from liquid rations at 30 to 45 days. Less vigorous ones should be given a liquid ration for a longer period. The nurse cow method of feeding is recommended for delicate and valuable calves. This method produced the smoothest and most attractive calves. Whole milk feeding was too expensive and did not produce better calves than some other methods. The use of about 100 pounds of whole milk and 60 to 85 lbs. skim milk powder produced a good calf. Part of the skim milk powder may be fed liquid and part dry.

Remade skim milk (powder) may be fed cold. Maryland calf meal which contained about 25% skim milk powder gave satisfactory results when fed dry, but was not satisfactory when fed as a gruel.

Bulletin 320—Spinach for Canning, contribution from the Horticultural Department—6 graphs. The highest yields of trimmed spinach were obtained from the first half of the fall harvesting season. The overwintered crop gave a low yield of trimmed spinach. The method of handling determines whether spinach gains or loses weight by blanching. The best grade of canned product was gotten from the first two harvests of the fall crop and the quality declined with the advance of the season. The spring harvested crop was relatively high in moisture. The content of total and invert sugars increase with the advance of the season.

Bulletin 321—Prices of Maryland Farm Products, 1851-1927, contribution from the Department of Agricultural Economics, U. S. Department of Agriculture in cooperation with this Station. This bulletin gives a discussion and tabulation of the prices paid producers for Maryland staple farm products: grains, hay, potatoes, tobacco, fruits, vegetables, meat animals, dairy products, wool, horses, mules and cows; are given by months through a period of 75 years. Value of currency in gold; wages of farm labor and index numbers of non-agricultural commodities are also given. The results are presented in 23 graphs and maps and 201 tables.

An activity in the Poultry Department is interesting and is believed to have largely benefited the poultry interests of the State. This is the Egg Laying Contest, which is now in its sixth year.

It is a self-supporting enterprise—in fact there appears to be a little profit. Poultrymen may send a "pen" of ten birds to be officially tested for laying qualities. Accurate records are kept of feed and eggs and the fowls are returned to their owners after the tests are completed.

It is gratifying to note that the service rendered by the seed inspection is growing in favor as indicated by the increase in the number of samples submitted for test and advice as shown by the records for the years ending June 30 as follows:

| | |
|-------|---------------|
| 1928— | 902 Samples |
| 1929— | 1,408 Samples |
| 1930— | 1,925 Samples |

The attitude of the trade and the public towards good seed is very appreciative and has made the past year's work very satisfactory. The installation of new apparatus has enabled the laboratory to improve its organization so as to do more and better work.

This laboratory is serving the farmers by supplying legume inoculums, tuberculin, hog cholera serums, blood testing cows for abortion germs, poultry for white diarrhoea and the general diagnosis of animal diseases.

The laboratory has prepared and sent out the following products:

PREPARATION AND DISTRIBUTION OF BIOLOGICS

| Prepared and Distributed | 1928-29 | 1929-30 |
|-------------------------------|-------------|-------------|
| Autogenous bacterins..... | 33,615 c.c. | 30,075 c.c. |
| Tuberculin..... | 16,415 c.c. | 13,345 c.c. |
| Avian tuberculin..... | 3,500 c.c. | 3,025 c.c. |
| Johnin..... | 1,000 c.c. | 850 c.c. |
| Legume inoculum cultures..... | 6,898 | 7,106 |
| Chickenpox vaccine..... | 30,000 | 11,700 |

Distributed Only

| | | |
|-----------------------------|--------------|--------------|
| Anti-hog-cholera serum..... | 545,900 c.c. | 206,450 c.c. |
| Hog cholera virus..... | 2,010 c.c. | 690 c.c. |

Numerous other articles were distributed such as disinfectant, syringes, thermometers, needles, etc.

LABORATORY EXAMINATIONS

The following examinations of animals or materials have been made, some of which necessitated field trips.

| | 1928-29 | 1929-30 |
|---|---------|----------------|
| Milk examinations..... | 1,625 | 1,874 |
| Mastitis cases..... | 427 | 236 |
| Rabies (4 positive—11 negative)..... | 15 | 8 (2 positive) |
| Hogs examined or treated..... | 300 | 432 |
| Examinations for parasites..... | 37 | 52 |
| Anthrax (Both negative)..... | 2 | |
| Tuberculosis..... | 63 | 105 |
| Sheep Diseases..... | 123 | 202 |
| Black Leg (Negative)..... | 1 | 1 |
| John's Disease Examinations..... | 110 | 23 |
| Physical Examinations..... | 53 | 134 |
| Post-Mortem Examinations..... | 71 | 87 |
| Periodic Ophthalmia..... | 5 | 10 |
| Cattle Bled..... | 730 | 1,247 |
| Bang Disease Blood Tests..... | 7,521 | 11,014 |
| Tonsil Examinations..... | 34 | 83 |
| Bang Disease Milk Tests (Guinea Pigs)..... | 26 | 78 |
| Poultry Examined..... | 766 | 1,041 |
| Blood Samples Tested for Bacillary White Diarrhoea..... | 5,875 | 6,244 |
| Examinations of Poison Feeds..... | 23 | 14 |
| Miscellaneous Diseases and Examinations..... | 428 | 537 |
| Field Trips..... | 83 | 94 |
| Miles Travelled..... | 5,394 | 6,224 |

NEEDS FOR RESEARCH

The need of land, greenhouses, laboratories and equipment for research work is pressing in all departments; but particularly great for the proper conduct of the departments of Agronomy, Animal and Dairy Husbandry and Poultry Husbandry. These needs have been set forth in detail in the Animal reports of the Station.

On behalf of the Experiment Station Staff I extend to the President of the University and the Board of Regents their appreciation of your help and efforts to provide facilities for the research work.

Respectfully submitted,

H. J. PATTERSON,
Director.

College of Arts and Sciences

January 7, 1931.

To the President of the University:

The Report for the biennium ending as of October 1, 1928, outlined the growth and needs of the College of Arts and Sciences. This biennial report, issued as of October 1, 1930, shows that the College continues to grow and that although the needs of the College have been met in part there are many which are as yet unfilled and others which have arisen because of this growth and of other factors.

The enrollment in 1928-29 was 588 and in 1929-30, 625. The enrollment in 1930-31 promises to be even larger as the number of Freshmen in this College is at present 250. On the other hand, the period of depression through which the country is now passing may cause the withdrawal of some of the upper classmen.

The increase in the number of Freshmen, in particular, enrolled in the College Park branch of the University, as well as the increase in the number of upper classmen due to the earlier growth of the University, has added materially to the duties of the Faculty of the College of Arts and Sciences since it is responsible for practically 50% of the credit courses taken by students in the other Colleges of the University.

The increase in the number enrolled in the Graduate School has also had a marked effect, for much of the course work in the School falls to the lot of members of the Faculty of this College. The graduate work in Chemistry given at night in Baltimore has been continued as there is still a demand for it. In addition, graduate work in Chemistry is now being given at night in College Park. This latter work is primarily for chemists employed by the Department of Agriculture. These courses pay for themselves.

Extension Work is under the direction of the Extension Service but, at the request of the Director, considerable time has been devoted by members of the Faculty of this College to radio talks, short courses, and addresses.

The courses given in the Arts and Sciences in the School of Dentistry and the School of Pharmacy are taught by members of the Staff of this College detailed for the purpose. As a rule, these instructors live in Baltimore. The courses offered are under the supervision of the heads of departments located at College Park who visit Baltimore periodically in order to inspect the work being done.

The demand for courses outlined by Professional Schools as a pre-requisite to entrance seems to be increasing, as is the demand for the combined degree in Medicine, in Law and in Pre-Nursing.

As the College of Arts and Sciences flourishes so flourish the other Colleges of the University, for it is obviously impossible intelligently to enter upon the study of technical and professional subjects unless well grounded in the fundamental Arts and Sciences. The contention that the College of Arts and Sciences should offer courses which would prove valuable not only in one's business or professional life but also in his moments of leisure is well founded and is receiving more and more support as time progresses. Only lately this contention was strongly supported by Chief Justice Hughes in his Phi Beta Kappa address and also by Dr. W. J. Cooper, Federal Commissioner of Education, who claimed that the time would come when even in High Schools the dominant note would be the teaching of "how to live" rather than "how to make a living". It seems, therefore, that for every reason much attention should be paid to the selection of good teachers and research men, adequate salaries for the staff, and the furnishing of ample equipment for the proper conduct of the work in the Arts and Sciences.

There have been some changes in the staff due to withdrawals and replacements and some additions. The net result has been an even better balanced and more efficient staff than in the past. The necessity for an addition to the present number is more pressing than ever, because of the increase in enrollment. It was necessary at the beginning of this semester to add a number of temporary part-time assistants and the necessity for the selection of such instructors on a permanent basis, and of others in addition, will in all probability become more imperative next year and later.

The need, shown in the last report, for strengthening the existing Departments and adding new Departments still exists. It is believed that the scarcity of courses in Philosophy, Ethics, and particularly the Classics militates against the best interests of the University. Departments of Journalism, Art and Music should be established at the earliest opportunity. A Department of Music is probably the more important at this time since there is as marked a demand for teachers of Music in High Schools as there is for teachers of other branches who are College Graduates. Culture of the voice both in speaking and in singing is also most desirable. None of these improvements can be made unless funds are provided but it is doubtful whether a request for funds for the establishment of new departments should be made in our "Askings" for the next biennium in view of the present depression. Attention is called to these needs in the hope that funds may be forthcoming from some source other than the State.

The question of space is even more important than at the time of the last report. Offices, classrooms, and laboratories are all crowded. Instructors have to go in successive hours from building to building to meet the students taking their courses. Some relief may be possible when the administrative offices are moved to the new Library but such relief, if given, will be inadequate and it is devoutly hoped that funds will be furnished by the Legislature to provide a building for the Arts and Sciences.

As there is more space provided for the Library in the new building it is highly desirable that all possibility of criticism from either outside or inside sources be removed through the purchase of books necessary for the intellectual and liberalizing development of students in Chemistry, Physics, Biology, Mathematics, English, History, Languages, Economics, Sociology, etc.

The School of Business Administration in Baltimore, mentioned in the last biennial report, has finally been closed. In 1929 one degree of Bachelor of Science in Business and one degree of Bachelor of Commercial Science were awarded and in 1930 one degree of Bachelor of Science in Business was awarded. The value of a properly conducted commercial course is evidenced by the fact that the demand for the course in Business Administration offered in the College Park branch of the University is becoming more marked each year.

During the biennium various articles, book reviews, and bulletins have been written and published by members of the Staff of the College. In addition, Dr. Tobias Dantzig of the Department of Mathematics has published a noteworthy volume—"Number, The Language of Science"; and Dr. C. B. Hale of the Department of English—"Middle English Metrical Romances". Several other members of the staff have volumes in or ready for the press. This indicates that the spirit of scholarship and of research is strong within the Faculty of the College.

The report for "Feed, Fertilizer and Lime Inspection Service" will be found in a separate section. In this report it is only necessary to state that the services of the staff engaged in this work have been efficient and the spirit of co-operation all that could be desired.

In conclusion the needs of the College of Arts and Sciences may be summarized as follows:

- I. Salaries—Salaries are needed which are sufficiently large to insure the retention of the services of competent teachers, investigators and productive scholars, and, when vacancies occur, as they will from time to time, sufficiently attractive to enable the authorities to engage successors of equal or greater capacity in any particular field. Provision should be made also for the employment of additional members of the Faculty now needed.

- II. Teaching Staff—The increase in the student body demands an increase in the number of teachers of the Arts and Sciences if instruction of the highest type is to be provided. This demand will increase as time passes unless the size of the student body be limited in all branches of the University.
- III. Physical Equipment—Sufficient space for offices, classrooms and laboratories through the erection of new buildings and a re-allocation of space in existing buildings should be provided for the proper conduct of the activities of this College.
- IV. Reference Books—The correct mental development of the students taking courses offered by the members of the Faculty of this College is possible only if additional reference books and periodicals be placed in the new College Library and if Departmental Libraries be obtained through the allocation of funds for that purpose.

Respectfully submitted,

T. H. TALIAFERRO,
Dean.

College of Education

To the President of the University:

The College of Education was established to prepare high school teachers, vocational teachers, high school principals and supervisory and administrative officers. In the field of elementary education its function is to supplement the work of the Normal Schools by providing opportunity for post-normal work in preparation for positions as elementary school principals, helping teachers and supervisors. Up to the present time the College has been operated in five functional divisions: General Education, Arts and Science Education, Agricultural Education, Home Economics Education, and Industrial Education. The Summer School, although organically distinct from the College of Education, is administered by the Dean of the College of Education and is, in fact, an administrative division of that College.

The College was definitely organized in the academic year 1918-19. In that year it registered 14 four-year students, 201 in the Summer Session and no extension students. In the academic year 1929-30 there were enrolled 137 four-year students, 175 in extension courses (Industrial Education courses in Baltimore), and 745 in the Summer Session. The enrollment up to December 1st of the present year is 150.

The enrollment figures, however, do not accurately show the service of the College, for students are permitted to enroll in other Colleges while pursuing, under the supervision of the Faculty of the College of Education, the curriculums in Arts and Science Education, Agricultural Education and Home Economics Education. There are actually about 230 students pursuing the curriculums in Education in fulfillment of the requirements for the Teachers' Special Diploma. Of these 53 are seniors.

In the period since the College was established approximately 300 graduates have been granted the Teachers' Special Diploma. Of this number about 200 have taught in the public schools of Maryland. In the present year there are 120 in the Maryland schools, exclusive of Baltimore. This includes one county superintendent and 11 high school principals. On the 1930 class, twenty-nine are teaching in Maryland. A good many of our graduates in Education are teaching in other states at salaries higher than they could command in this State. Each year some graduates take post-graduate work here or elsewhere. Of the 1930 class, eight are doing so. Comparatively few of those who go immediately into graduate work become high

school teachers; they go, after completing their graduate work, into positions in colleges or into scientific work. The "migration" from the teaching ranks is indicated in the figures for these now teaching in Maryland as compared with the number who are known to have taught. Marriage accounts for a large part of the disappearance of women teachers. More attractive and lucrative opportunities in other fields accounts for the migration of many teachers of both sexes; also for the failure of a good many of our graduates to teach at all. The following quotation from a letter from a recent graduate illustrates this point: "At present, I have a position as chemist for the..... Company. I am nicely located, and the future looks very bright in this field. Teaching didn't seem to offer a great deal, due to the economic conditions; so when this opportunity was presented to me, I took it".

Since 1924, the Master's degree has been conferred upon 21 graduate students in Education. Of these, 5 were graduates of the University of Maryland; 16 were graduates of other institutions. Eighteen were teachers with one or more years of experience; three were graduates without experience. Seven spent a full year in residence; 14 did their graduate work on the Summer School plan. Of these 21, 13 are employed in the Maryland schools: one as a county superintendent; 8 as high school principals; 4 as high school teachers. One is teaching in a private school in Baltimore; one is a county agent in the extension service; one is in the United States Department of Agriculture; one a division supervisor of Agricultural Education in Virginia; one a city superintendent in Mississippi; one in a mission school in China; one "married"; one whose present location is unknown.

Since the last biennial report the personnel has been slightly increased. Mr. E. F. Long, who was on half-time, has been given full-time status and a critic teacher from the staff of the Hyattsville High School has been appointed to supervise practice teaching in history.

Under our State law, "observation and practice teaching of high school subjects" is an indispensable requirement for the high school teacher's certificate. In this, it is in line with other progressive states. Observation and practice teaching are the heart of good teacher training. This part of our program has been carried on since 1920 in co-operation with the Hyattsville High School. The advantages and disadvantages of this arrangement were discussed fully in former biennial reports. The disadvantages become more serious with the increase of student teaching. There is the problem of dual administrative responsibility with the delicate adjustments necessary to keep such an administrative scheme in operation. In our own case there is the further disadvantage that the high school is two miles from the University. This entails a great waste of time

on the part of both teachers and students as well as a considerable expense for transportation. It further restricts the amount of observation of teaching that can be offered to students as the schedules cannot be so arranged as to allow consecutive periods for observation. The class schedules of the two institutions are distinct and it is practically impossible to arrange the student teachers' teaching schedules so that they do not interfere with necessary courses in the University.

The present arrangement is working about as satisfactorily as such a co-operative plan can be expected to work.

It was pointed out in the last biennial report that the enrollment of the Hyattsville High School was up to its full capacity. In the school year 1929-30 the school was rather badly crowded. The opening of two new high schools (Bladensburg and Mt. Rainier) in September of this year has not eased the situation appreciably. The enrollment at Hyattsville in September of this year was only 20 less than in the preceding year, and is still too large for the plant. Additional high school facilities will have to be provided soon in this immediate vicinity.

To economize time of instructors and students and to ensure consistently good results we should have a University High School, owned by the University, and controlled and operated by the College of Education. It should provide space: (1) for a high school of 350 to 400 students, and (2) for College of Education classes and offices. It might well take care of all the high school pupils in Vocational Agriculture and Vocational Home Economics in this part of Prince George's County. The advantage of close proximity to the University resources in Agriculture and Home Economics are self-evident.

In providing a University High School we should be in step with the march of events. An incomplete survey shows that at least eighteen state universities now have University High Schools, two are building such schools, three are definitely planning to build in the near future and several others are in our own position—hoping that such buildings may be provided within a few years.

It would seem that co-operation with the County Education Authorities might be arranged whereby the county, if relieved of the capital outlay for a new building in this area and of overhead operating expenses, might agree to a plan similar to the Mississippi plan, i. e., paying to the University a fair per pupil cost of instruction.

Former biennial reports have contained full descriptions of the organization, the functional activities and the needs of the several departments of instruction in the College of Education. In this report, the salient points of the former reports are summarized and new developments within the biennium are noted.

The term "general education" designates the courses in education that are fundamental in the preparation of all teachers, whether of the customary high school subjects or of the newer subjects such

as agriculture and home economics; and also, the advanced courses in educational psychology, administration and research.

Three essential needs in connection with this department were set forth in the last report. These needs have become more insistent within the past biennium.

In the last report the need for a post-normal school curriculum leading to a degree was pointed out. The present normal school course in Maryland is two years. This probably will be increased to three years in the near future. Many graduates of the normal schools who are teaching in the elementary schools desire to continue in this field and are asking for the degree in elementary education. At the present time there are approximately fifty such teachers among our regular summer school students. The progressive superintendents of the State are calling our attention to this need for a degree in elementary education in order that capable and ambitious young elementary school teachers may qualify for elementary school principalships and supervisory positions. There is also a considerable number of elementary teachers in Washington who would take advantage of the opportunity to secure a degree in elementary education. At present we are able to offer work leading to a degree only in secondary education. This does not meet the requirements of the State Department for certification in the elementary field. As already noted, the present state normal course includes but two years of training. If the course is increased to three years, there will be at least a full year of post-normal work to be done to earn a degree. This is a function that the State University should perform. This need can be met by the addition of a professor of elementary education to have charge of the courses in the organization, curriculum and supervision of elementary education. The other essentials of a curriculum leading to a degree in elementary education can be supplied from the present offerings of the University.

There is an increasingly heavy demand upon the College of Education for graduate work. This demand comes chiefly from teachers in service who must have graduate work to meet the requirements for certificate renewal, for the high school principal's certificate and for other supervisory positions in the public school system. The most of these students do their course work in the summer sessions, but the direction of their special studies for thesis purposes is a responsibility of the regular instructors. There are now at least 70 such students registered in the Graduate School. The burden of performing this important service is entirely too heavy for the present staff. An addition to the staff of a man in educational administration who is trained in present-day methods of educational research is urgently needed.

For the past six years the College of Education has administered the entrance ability tests to freshmen and made the results available

to executive officers of the University. That this service is of real worth is shown by the fact that all executive officers dealing with students use the results in advising students. Further, some study has been made by four or five different members of the University staff, working independently, in an attempt to improve the usefulness of the results obtained in the tests for their own particular needs or groups of students. A systematic study of these test results should be made in order to determine their value in judging the fitness of students for college and for personnel work. A coordination of effort in this search for the real value of the tests should be effected. A primary need here is statistical clerical aid, that may eventually need to be supplemented by a personnel director who might at the same time function as a director of placement. The importance of this field in relation to student adjustment and guidance is apparent from the extended use of some form of test for purposes suggested in numerous large universities, one of which gives such tests as an optional form of admission to college.

The course in methods and supervised teaching in the academic high school subjects, under the designation Arts and Science Education, are included as a sub-division of the Department of General Education. The subjects for which special methods and supervised teaching are provided are: History and the social studies; English; mathematics; science; and modern language. In the class of 1930, 36 students were enrolled in these courses. The supervision of student teaching was done by four teachers jointly employed by the University and the County School Board. The proportionment of salaries paid jointly by the University and the County Board have been readjusted as recommended in the last biennial report, and is now upon an equitable basis.

The department of Agricultural Education and Rural Life in the past twelve years, in charge of Professor H. F. Cotterman, has performed an important and effective service not only in preparing teachers of vocational agriculture but also indirectly in preparing county agents for the Extension Service and for other forms of rural leadership, as frequently such leaders are recruited from the teachers of vocational agriculture in the State. The enrollment in this department continues to be heavy. In the first semester of the present year (1930-31), 54 students are enrolled. In addition to caring for these students enrolled in the Agricultural Education Curriculum, the department, as heretofore, carries its quota of basic courses in the Department of General Education and in the Summer School. As in former years, the Professor of Agricultural Education has continued to "follow up," by personal visitation, those graduates who have been employed within the State as beginning teachers.

The program of graduate work in Agricultural Education in connection with the Summer Session has been continued. In this project

the cooperation of the College of Agriculture has been sympathetic. This University, as stated in the last biennial report, has a unique opportunity for development in this field. We are close to the United States Department of Agriculture, with its unrivaled resources. Further, there is no institution in this immediate vicinity offering an adequate graduate program in Agricultural Education. The development of such a program here would be an asset not only to the College of Education but even more to the College of Agriculture in the development of its graduate work. The specific need is for funds for the employment each summer of one or two outstanding men to supplement the staff of the department and some additional aid for the staff of the College of Agriculture. The additional expense would not be great.

For the undergraduate work the most urgent immediate need is increased facilities for "practice" or "directed" teaching. With the heavy enrollment in this department, the facilities in the Hyattsville High School are becoming too heavily taxed. The problem is particularly acute this year. Either enrollment in this department must be restricted, or funds must be forthcoming for the part salary of a critic teacher in agriculture who would work in another of the nearby high schools.

The work in Home Economics Education includes instruction in Technique of Teaching, Education of Women, Methods and Practice in Teaching Home Economics, Child Psychology and Child Study.

The teacher training work is given at the University by the Professor of Home Economics Education, Miss Edna B. McNaughton. The practice teaching is done in the vocational department of the Hyattsville High School. The instructor in this high school department acts as critic teacher. The organization of this department was described in an earlier biennial report.

The Child Study instruction has developed rather extensively in the last three years. Child psychology is given in the junior year. In the senior year there is a unit in Child Study which studies the mental, emotional and physical development of the child. Opportunity for observation and for work with pre-school children is made possible through the cooperative arrangements with the Washington Child Research Center. It also is possible to elect advanced courses in this work.

One phase of the teacher training work has been the teaching of a unit of Child Care in the high schools. Special emphasis has been placed upon this work in order that teachers may be prepared to teach this subject, which is being given an important place in the high school curriculum.

As heretofore, the program of Industrial Education has been carried on chiefly in Baltimore in cooperation with the City Department

of Education; but courses in Industrial Education have been given in the last two summer sessions at College Park.

During the academic year of 1929-30 seventeen extension courses were conducted by the Department of Industrial Education for the teachers of the City of Baltimore and three courses were conducted at the summer session at College Park. The total enrollment in the twenty courses was 243 teachers, of which 73 were women and 170 were men.

In the year 1929-30 twenty extension courses were conducted in the City of Baltimore and two courses at the summer session. Two hundred and sixteen teachers were enrolled in the twenty-two courses, of which 78 were women and 138 were men.

In order to meet requests from the State Department of Education and the Department of Public Schools of the City of Baltimore for the preparation of shop and drawing teachers, courses in electricity, diversified shop work, woodwork and trade drawing and blueprint reading were offered during the biennium.

Through the courtesy of School Department of the City of Baltimore it was possible to conduct these courses in well equipped shops in the public schools. In fact, since 1925 most of the courses of this department have been conducted in public schools of the City of Baltimore and the success of the extension courses has been in a large measure due to the interest and cooperation of the officials of the Baltimore Public Schools.

For the past two years the aim of the teacher training program has been to meet the needs of the following groups: candidates for teaching positions; beginning teachers; teachers meeting the requirements for certification; teachers in service; women industrial teachers, and night school teachers.

With the needs of these groups of teachers in mind a variety of courses has been offered under the direction of the Professor of Industrial Education, Mr. B. T. Leland, assisted by specialists on part-time from the official staff of the public schools of the City of Baltimore. These courses fall into four groups: (1) courses in methods of teaching; (2) courses in professionalized subject matter; (3) courses in shop practice; (4) content courses such as English for Shop Teachers, First Aid and Hygiene, Tests and Measurements, Statistics and Vocational Guidance.

The compensation of all part-time instructors has been met out of receipts from fees for tuition.

Owing to the continued interest shown by many teachers in meeting the requirements for a degree, the four-year curriculum, which has been under consideration since 1926, became a reality in the spring of 1930. A curriculum was adopted at that time to become effective in the present year. For the present it will be administered

on the extension and summer school basis. Thirty-four applications have been made for admission to this curriculum.

With the organization of the four-year curriculum, the Department of Industrial Education is able to meet the standards set up by the State Department of Education of Maryland and departments of education of other states, for teachers of industrial subjects and for supervisors and directors of industrial education.

Attention was called in the last biennial report to the growing need of a four-year resident curriculum in industrial education at College Park. The need here is not primarily for the vocational curriculum (Smith-Hughes) so much as for an industrial art curriculum. The rapidly expanding programs of industrial arts in the progressive Counties of the State emphasizes this need and makes it incumbent upon the University to provide for it.

In the last biennial report it was pointed out that the University is not meeting the demand for preparation of teachers of Physical Education, Music, and Commercial subjects. To this list should be added Industrial Arts. The demand is growing. The progressive county systems of the State are rapidly including Physical Education, Music and Industrial Arts in their high school programs and the State Department of Education is actively encouraging this movement. Students are asking for preparation in these fields. There is a surplus of teachers of academic subjects, but, in this State, no surplus of teachers of these "special" subjects. Indeed, in too large a measure such teachers have to be secured from outside the State. The State University should be supplying a fair quota of teachers in these fields. Up to the present our only contribution has been made through the Summer School.

This year a beginning has been made towards the solution of preparing women for teaching Physical Education by the appointment of a well qualified instructor who is devoting part time to teacher training. Similar provisions should be made for men. There is still "urgent need for a department and a professor of Physical Education, who, for the immediate future, could serve also as director of Physical Education for the University."

The need for a department and professor of Music Education is equally urgent. A number of County Superintendents as well as the State Supervisor of Music, recently have called attention to the fine service the University could render through such a Department.

The following statement in the last biennial report upon Commercial Education still holds good:

"Under the old certification requirements for commercial teachers (two years of college work), there has been a deficiency in the supply of such teachers. The new requirement (four years of college work) will tend to increase this deficiency unless immediate steps are taken

to supply the demand. A special curriculum should be established, open to graduates of commercial departments of high schools who have acquired sufficient preparation in stenography, typewriting, and bookkeeping. Such students would be required to maintain their skill in these branches by summer employment in commercial establishments or part-time employment." A study has been made within the past year of the commercial education curriculum, the extent to which the present offerings in the University are adequate and the additions in the way of professional courses that are necessary to put such a curriculum into operation. It can be started whenever funds are available to employ an instructor equipped to handle the professional courses.

Similarly, the industrial arts situation has been surveyed and plans for such a curriculum are so far advanced that it can be put into operation at any time funds are available.

It was noted in the last report that "The University has no organized placement service for its graduates. Much effective placement service is rendered by the several colleges and departments within the colleges. The College of Education needs additional assistance for its work of this kind. This need would be met by the appointment of an additional member of the staff to devote part time to this service and part time as instructor to relieve pressure in courses with overloaded enrollments; and a part time clerical assistant. A placement service so organized not only would serve the College of Education, but also would supplement the efforts of the other colleges and departments." This need for the College of Education has been met in part by taking on Mr. Long for full time work. He has been able to study the problem and to make some preliminary plans. The additional clerical assistance specified is still to be secured.

Summary—In the past biennium, the College of Education, within the limits of its equipment and personnel, has satisfactorily performed its functions. The personnel has been slightly increased as noted above. A beginning has been made toward a more systematic placement service. A beginning has been made in training teachers for physical education. The salary proportionment for teachers jointly employed by the University and the County Board of Education has been equitably readjusted. A four-year industrial education curriculum has been established. The extent and kind of additional service that the College should render to the State has been more fully surveyed and analyzed. The needed additions to our personnel are a Professor of Education Administration whose work will be largely research and the direction of research; a Professor of Elementary Education; a Professor of Music Education; a Professor of Physical Education; an instructor in Commercial Education; an instructor in Industrial Education at College Park; additional clerical service; and

provision for additional assistance for Summer Graduate work in Agricultural Education. A small increase in funds for salaries of present personnel and for contingent expenses is needed. The immediate urgent equipment need is for additional laboratory and classroom space devoted exclusively to College of Education purposes. The future need is for an Education Building as specified above, a need that should be met within the next five years.

Respectfully submitted,

W. S. SMALL,
Dean.

The Summer School

To the President of the University:

The program of instruction in the Summer School is planned primarily to meet the needs of teachers in service and of students desiring to satisfy the requirements for undergraduate and graduate degrees.

The enrollment and distribution of students for the years 1928-1930 is as follows:

Enrollment:

| | 1928 | 1929 | 1930 |
|---------------------------------|------|------|------|
| Men | 205 | 218 | 257 |
| Women | 421 | 503 | 488 |
| Total | 626 | 721 | 745 |
| Group Distribution: | | | |
| Undergraduates | 86 | 110 | 126 |
| Graduate Students | 103 | 130 | 157 |
| Elementary School Teachers..... | 343 | 397 | 363 |
| High School Teachers..... | 123 | 142 | 181 |
| Residence Distribution: | | | |
| Maryland | 491 | 571 | 593 |
| Outside Maryland..... | 135 | 152 | 152 |

Of the total enrollment of 745 in 1930, 544 or 73%, were teachers. (This does not include the teachers registered as graduate students.) Of the teachers enrolled, 181, or a fraction more than 33% of the total, were high school teachers. The experience of the past biennium re-emphasizes the statement in the last report that an increasing number of the teacher-students are registering as candidates for degrees and that similarly there is an increasing number who register in the Graduate School. The table above shows an increase of graduate students from 103 to 153. Of the 153, more than one-half were teachers. The importance of this phase of summer school work has been covered in the current report of the College of Education. Likewise the need for a post-normal curriculum leading to a degree in Elementary Education has been emphasized. It is referred to here because the summer session will play an essential part in operating this program.

The demonstration schools, both high and elementary, have been improved. They are now serving reasonably well for observation purposes, but the high school is inadequate for practice teaching. The

chief difficulty is in offering a six weeks' program of studies that will attract a sufficient number of high school pupils to provide for both observation and practice teaching.

Among the improvements, continued or initiated during the bien-nium, are: Further development of the policy of providing courses in sequence over a series of sessions; the policy of retaining as far as possible the special summer school instructors from year to year; the developent of a systematic program for music instruction, especially for the high school; and further development of graduate courses, especially in Chemistry, History, Modern Languages, Secondary Education, Psychology, and in Agricultural Education and the Related Agricultural sciences. The increased revenues have made it possible to meet some of the increasing demands for expansion of the program of courses and for more equitable compensation of instructors.

An increase in the State appropriation for the Summer School is needed. The State appropriation now, \$3,500, is the same as it was when initiated ten years ago. In the meantime the enrollment has tripled and the demand for advanced courses has grown from practically nothing to the proportions indicated by the present enrollment of graduate students and high school teachers.

Respectfully submitted,

W. S. SMALL,
Director.

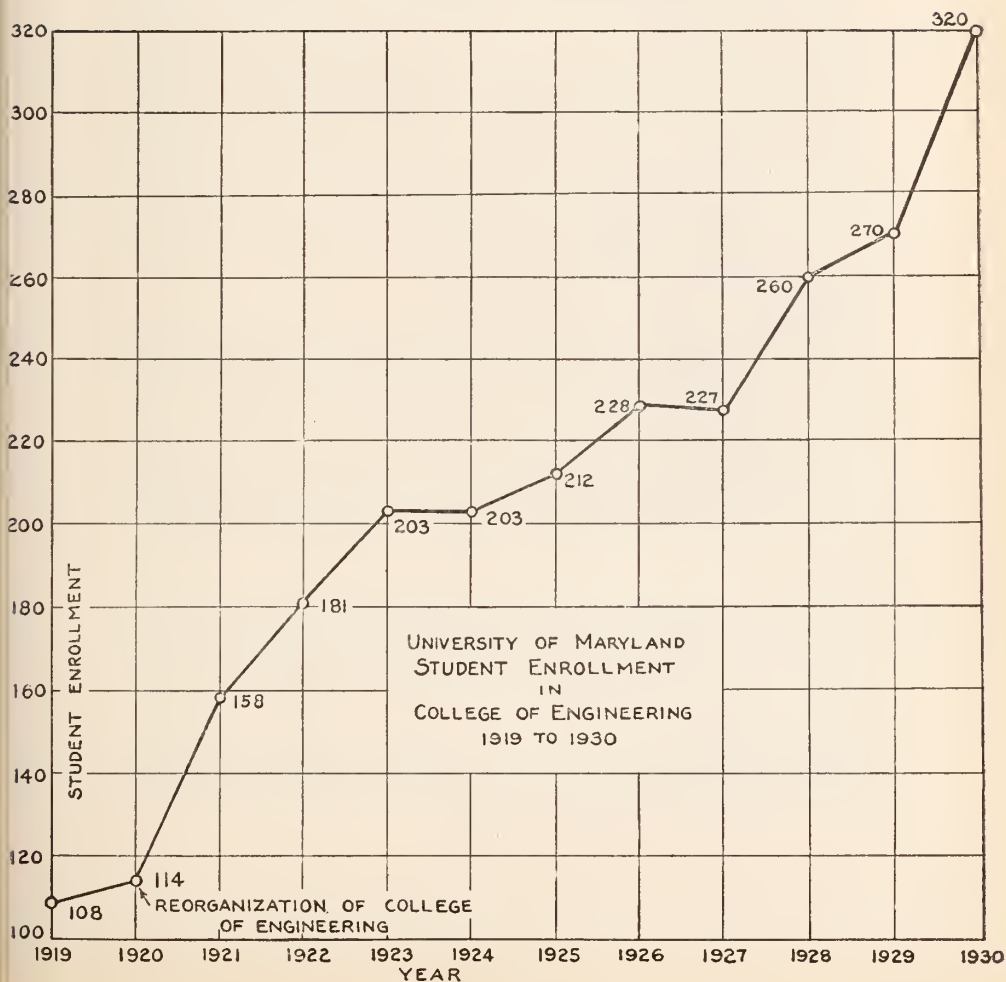
The College of Engineering

To the President of the University:

The objective of the Engineering College is to train young men for useful careers in the field of engineering and thus to open for the youth of Maryland the same opportunities that are afforded the youth of other states by their state-supported institutions.

The record made by many of the graduates of the Engineering College has been noteworthy and they have received recognition by promotion in competition with graduates from engineering schools in all parts of the country in many of the largest industrial enterprises.

The student enrollment in the College of Engineering since its reorganization in 1920 shows a continued increase, and accentuates more acutely the condition noted in the last biennial report, where it was stated that the number of students at that time already taxed the facilities of the instruction staff and classrooms. In 1919 the enrollment was 108; in 1930, it reached 320. The chart printed herewith shows graphically the enrollment by years from 1919 to 1930.



The Legislature of 1929 made an appropriation of one hundred thousand dollars for an addition to the Engineering Building, plans for which have been made, and the building when completed will relieve the crowded conditions, but there will be required in the next few years additional space, which is provided for in the plans for the completed additions to the Engineering Building.

The faculty has been increased during the past biennium by the appointment of one assistant professor of mechanical engineering.

In the past three years students in the Engineering College who failed to receive a grade of C (70%-80%) or better in second semester sophomore physics and sophomore mathematics may not register for engineering courses in the junior year until they pass satisfactorily the second semester of the above courses. A marked improvement in the work of the junior year has resulted.

The courses in public speaking have been arranged on a unique plan for the students in the College of Engineering and have attracted much favorable comment. These courses constitute a four-year program which is progressive. The senior work, which takes the form of special meetings, is participated in by all the students in the Engineering College. The results have been particularly satisfactory.

There was established in 1929 at the University of Maryland a chapter of the Tau Beta Pi Association, the national honorary engineering fraternity. This recognition had long been an objective of the local honorary engineering fraternity, whose efforts were at last crowned with success. There has resulted an added incentive for good scholarship.

During the summer of 1930, in co-operation with the U. S. Bureau of Public Roads and the State Roads Commission of Maryland, a special study was made of the traffic capacity of roads. Two observers equipped with a motor car made traffic studies at fifty-one points scattered between Washington and Boston. This project was under the immediate charge of the Dean of the Engineering College, who presented a report of this work at the meeting of the Highway Research Board of the National Research Council held in December, 1930.

During the summer of 1930 a special co-operative arrangement was made with the State Roads Commission whereby the head of the Civil Engineering Department, Professor S. S. Steinberg, was engaged in a special study of bridge construction. One of the results of this work was the organization of the Short Course for Bridge Inspectors, as herein mentioned.

Extension classes for miners in the coal fields in Western Maryland have continued with success. Interest in this work has been main-

tained and receives the combined support of mine officials and mine workers. Classes included members from each of these groups. These mining courses are conducted in close co-operation with the Maryland Bureau of Mines.

A Short Course for Volunteer Firemen was organized and held from September 2 to 5, 1930. This course was sponsored by the Maryland State Firemen's Association, with the direct co-operation of the Fire Department of the City of Baltimore through Chief August Emrich. Through W. R. Hough, General Chairman of the Baltimore Safety Council, men of national reputation were secured as special lecturers. There was an attendance of 49, representing volunteer fire departments from all sections of the State.

In co-operation with the State Roads Commission, there was held during the Christmas recess in 1930 a Short Course for State Bridge Inspectors, 46 of whom attended. The entire week of December 15 through December 19 was devoted to this work and a schedule of courses was developed that occupied the evening, as well as morning and afternoon hours.

R. H. Skelton, Associate Professor of Civil Engineering, published this past year an exceptionally comprehensive book on "Boundaries and Adjacent Properties," which, for the first time, presents the question of land boundaries from the standpoint of both the legal and the engineering professions. The book has been most favorably commented upon by members of each of these professions.

Respectfully submitted,

A. N. JOHNSON,
Dean.

The Graduate School

To the President of the University:

The Graduate School offers to qualified students with the Bachelor's degree an opportunity to pursue intensive study and to undertake research in a restricted field. The higher degrees conferred by the University of Maryland for work in the Graduate School are Master of Arts, Master of Science, and Doctor of Philosophy.

A candidate for the Master's degree devotes a minimum of one academic year or its equivalent to a systematic and intensive study in a limited field of knowledge. By such concentrated effort the student becomes thoroughly familiar with the literature of his major subject and also with the methods of obtaining new information.

Three years of full time resident graduate study beyond the Bachelor's degree or two years beyond the Master's degree are usually required for the degree of Doctor of Philosophy. This degree is not conferred merely as a certificate of residence and work but is granted only upon sufficient evidence of high attainments in scholarship and ability to carry on independent research in the special field in which the major work is done.

There is an ever-increasing demand for men and women who have pursued intensive study in a special field and who have also acquired a degree of mastery of the tools of research in this field. Practically all of the higher positions in the teaching professions are now demanding men and women who have pursued graduate work equivalent to either the Master's or Doctor's degree. Many of the men and women who have received advanced degrees in the Graduate School are now discharging important duties as scientific specialists in the service of the State and Federal governments. Many of the industries are demanding men who are trained for industrial research. The Graduate School is training men especially for agricultural research in the State Experiment Stations and in other government and private agricultural research agencies. Because of the close proximity to the great library resources of the National Capital and the splendid co-operation of the United States Department of Agriculture, the University of Maryland is in a position to offer unusual opportunities for graduate work in subjects basic to Agriculture.

During the first years after the Graduate School was established graduate instruction was limited to five departments but in recent years there has been a gradual extension of graduate work through-

out the University. At the present time there are twenty-nine departments offering graduate instruction leading to the Master's degree. A much smaller number of departments are accepting candidates for the Doctor's degree. Graduate instruction was formerly offered only by departments at the College Park branch of the University but in recent years there has been developed a very excellent program of graduate instruction in the School of Pharmacy and in the School of Medicine in Baltimore.

During the present academic year a few courses, primarily for graduates, are being offered in the evening. The demand for these courses has come chiefly from the employees of the United States Department of Agriculture. It is essential that very definite restrictions and limitations be placed upon evening courses in order to adequately safeguard the standards of our graduate work.

The future expansion and growth of the Graduate School will depend largely upon the strength of the various faculties of instruction and research and also upon the growth of the material facilities and library resources of the University. It has been the policy of the Graduate School to limit the enrollment of graduate students to the number that the qualified departments are able to properly direct in effective graduate work. This policy, together with the careful selection of our graduate students, places a definite limit upon the total enrollment in the Graduate School. The enrollment and degrees conferred, by years, for the past two years are shown in the following table:

| Year | ENROLLMENT | | | DEGREES CONFERRED | | | |
|--------------|-----------------|----------------|-------|-------------------|------|-------|-------|
| | Regular Session | Summer Session | Total | M.S. | M.A. | Ph.D. | Total |
| 1928-29..... | 105 | 130 | 235 | 19 | 14 | 8 | 41 |
| 1929-30..... | 143 | 157 | 300 | 31 | 8 | 3 | 42 |

The scope of the problems investigated by graduate students is shown in the following list of titles of theses submitted during the past two years:

ADVANCED DEGREES AND TITLE OF THESIS

Class of 1929

G. B. COOKE, *Ph.D.*, Gloucester, Virginia.

The action of sulfuric acid on methyl isopropyl carbinol.

G. HAINES, *Ph.D.*, Hyattsville, Maryland.

A study of fertility and related conditions in the guinea pig.

M. J. HORN, *Ph.D.*, Washington, D. C.

An investigation on the proteins of the peanut, *arachis hypogaea*.

A. F. MASON, *Ph.D.*, New Brunswick, New Jersey.

A physiological study of the effects of different nitrogen carriers on the nitrogen nutrition of orchard plants.

- A. J. MOYER, *Ph.D.*, Crawfordsville, Indiana.
Studies of the growth response of fungi to boron, manganese, and zinc.
- M. N. POPE, *Ph.D.*, Falls Church, Virginia.
Catalase activity in relation to the growth curve of barley.
- C. L. SMITH, *Ph.D.*, Covin, Alabama.
A comparative study of the respiratory responses in vegetables after periods of cold storage.
- W. H. UPSHALL, *Ph.D.*, Port Elgin, Ontario, Canada.
The propagation of apples by means of root cuttings.
- G. J. ABRAMS, *M.S.*, Washington, D. C.
The value of a commercial insulating material, celotex, as winter protection for bee hives.
- E. A. BEAVENS, *M.S.*, Washington, D. C.
The significance of organisms of the *escherichia-aerobacter* group in raw and pasteurized milk.
- M. BECKER, *M.S.*, Baltimore, Maryland.
Thermophilic bacteria in culture media.
- M. H. BERRY, *M.S.*, West Chester, Pennsylvania.
Comparison of feeding practices in the rearing of dairy calves.
- J. M. BLANDFORD, *M.S.*, College Park, Maryland.
The effect of castration upon the palatability of market lamb.
- J. J. BOWMAN, *M.S.*, Washington, D. C.
Studies in the prevention of decay in orange fruits.
- A. C. BREADY, *M.A.*, Rockville, Maryland.
A study of the marks of High School pupils of Montgomery County, Maryland, with a correlation between these marks and a standard test of intelligence.
- L. P. DITMAN, *M.S.*, Westminster, Maryland.
The biology and control of the corn earworm.
- D. C. FAHEY, *M.S.*, Hyattsville, Maryland.
The response of bent grasses to the soil reaction.
- W. C. HARDEN, *M.S.*, Catonsville, Maryland.
A new series of sulphonphthaleins.
- R. L. HERD, *M.S.*, Washburn, Missouri.
The rate of evaporation of liquids from absorbing materials.
- S. M. JENNESS, *M.A.*, Colora, Maryland.
The development of public education in Cecil County, Maryland.
- V. C. KRABILL, *M.A.*, Burkittsville, Maryland.
A history of education of Frederick County, Maryland.
- R. G. MCCOLLEY, *M.A.*, Erie, Pennsylvania.
Taxation in Maryland.
- E. E. MILLER, *M.A.*, Takoma Park, D. C.
History of the *Belletristisches Journal*, 1851-1910.

- K. B. MORSE, *M.A.*, Hyattsville, Maryland.
Colonial Homes in Prince George's County, Maryland.
- H. J. NEWELL, *M.S.*, Lansing, Michigan.
Range of boron concentrations in nutrient solutions for tomato plants.
- E. R. NICHOLAS, *M.A.*, College Park, Maryland.
The influence of William Godwin in the works of Charles Brockden Brown.
- G. T. O'NEILL, *M.A.*, Silver Spring, Maryland.
The taxation of life insurance companies in Maryland.
- E. H. REHBERGER, *M.A.*, Baltimore, Maryland.
Recent tendencies in building, financing and operating toll bridges.
- E. ROWE, *M.A.*, Meyersdale, Pennsylvania.
A preliminary survey of early studies in adolescence.
- E. H. SCHMIDT, *M.S.*, Washington, D. C.
Quality of Maryland wheat.
- E. H. SIEGLER, *M.S.*, Takoma Park, Maryland.
The effect of low temperatures on the overwintering larvae of the coddling moth.
- F. T. SIMONDS, *M.S.*, College Park, Maryland.
A histological study of sclerotium of the brown rot fungus previous to the development of the apothecium.
- K. C. STONER, *M.A.*, Hagerstown, Maryland.
Why Maryland entered the Revolution.
- C. S. STOOPS, *M.S.*, Chestertown, Maryland.
The corn-wheat yield ratio in Maryland.
- W. M. STUART, *M.S.*, Washington, Virginia.
The inheritance of certain morphological characters in a barley cross.
- A. B. VENEZKY, *M.A.*, Hyattsville, Maryland.
Negro education in the State of Maryland since the Civil War.
- R. R. WEBSTER, *M.A.*, Deal's Island, Maryland.
The development of public education in Somerset County, Maryland.
- B. B. WESTFALL, *M.S.*, Buckhannon, West Virginia.
The precise determination of nickel as the sulfide.
- K. K. WORTHINGTON, *M.S.*, Baltimore, Maryland.
The solubility of the fluosilicates of sodium, magnesium, zinc, lead and copper.
- M. S. YORK, *M.A.*, College Park, Maryland.
The history and influence of the rural women's organizations in Maryland.
- L. D. ZERN, *M.S.*, Norristown, Pennsylvania.
Processing chocolate milk to reduce sedimentation in the finished product.

Class of 1930

- W. W. ALDRICH, *Ph.D.*, Port Deposit, Maryland.
Effect of late summer and early fall applications of sodium nitrate upon the color and keeping quality of apples the same season, and upon the nitrogen content of the fruit, leaves and spurs.
- L. A. FLETCHER, *Ph.D.*, Bennettsville, South Carolina.
A study of the factors influencing the red color on apples.
- O. REINMUTH, *Ph.D.*, College Park, Maryland.
A contribution to the study of the nature of the interaction between hydrous oxides and mordant dyes.
- M. E. BAFFORD, *M.S.*, Hyattsville, Maryland.
Some physical factors, i. e., Juiciness, Tenderness, per cent of fat, per cent of bone, weight, and age affecting the cooking losses and time required for cooking ram lamb shoulder roasts.
- J. C. BAUER, *M.S.*, Baltimore, Maryland.
A study of methylenedisulphonic acid and its derivatives.
- M. BERLINER, *M.S.*, Rockaway Beach, New York.
Preparation of Hexyl Flourescein, bromo hexyl flourescein, hexyl sulfoneflourescein, and bromo hexyl sulfoneflourescein.
- M. G. BREWER, *M.A.*, College Park, Maryland.
Ibsen's treatment of the professions.
- W. P. BRIGGS, *M.S.*, Washington, D. C.
Assays of some official iron preparations containing organic matter.
- J. BRONITSKY, *M.S.*, Brooklyn, New York.
The identification of organic acids by means of Para-Phenyl Phenacyl esters.
- M. E. BUTLER, *M.A.*, Washington, D. C.
Accounting in the State of Maryland.
- A. M. CAHILL, *M.A.*, Chicago, Illinois.
A comparison of the first part of the 1811 edition of Smollett's translation of *Don Quixote* of *La Mancha* with that of John Ormsby and a Spanish Text.
- R. L. CAROLUS, *M.S.*, Sterling, Illinois.
A study of floral primordia differentiation in *Brassica Rapa* and *Beta Vulgaris*.
- R. M. CARTER, *M.S.*, Baltimore, Maryland.
The preparation and properties of a few representative carbonates and carboethoxy derivatives related to ethylene glycol.
- E. M. DEMOORY, *M.A.*, Washington, D. C.
Syr Degore; Edited from Utterson's reprint of the Copeland Text.
- F. H. EVANS, *M.S.*, Washington, D. C.
The electrodeposition of zinc from cyanide solutions.
- P. L. FISHER, *M.S.*, Washington, D. C.
The effects of deficiencies of phosphorus on tomato plants at different stages of growth.

- P. W. FREY, *M.S.*, Lancaster, Pennsylvania.
The nutritive value of a yeast by-product obtained from the manufacture of alcohols.
- H. W. GILBERT, *M.S.*, Frostburg, Maryland.
The addition of nitromethane and phenylnitromethane to furfural acetophenone and furfural P-Bromo acetophenone.
- C. GRAHAM, *M.S.*, Blodgett, Mississippi.
A study of the life history and seasonal activities of the plum curculio, *Conotrachelus Nenuphar* Herbs, in Maryland.
- P. K. HARRISON, *M.S.*, Picayune, Mississippi.
Biology and Control of the red spider (*Tetranychus Telarius*).
- W. T. HENEREY, *M.S.*, Sedalia, South Carolina.
Biology and control of the Mexican bean beetle, *Epilachna Corrupta* mulsant.
- P. R. HENSON, *M.S.*, McCloud, Oklahoma.
A study of the effect of starchy endosperm on the distribution of carbohydrates in the corn plant.
- G. K. HOLMES, *M.S.*, Washington, D. C.
Some derivatives of hexylfluorescein and hexysulfonefluorescein, together with some notes on gossypol.
- R. HURLEY, *M.S.*, Peach Bottom, Pennsylvania.
The organization and business analysis of 282 farms in the Piedmont Plateau region of Maryland.
- M. E. KUIINLE, *M.A.*, Westernport, Maryland.
The character of King Arthur as exemplified in English Literature.
- G. A. LITTLE, *M.S.*, Edgewood, Maryland.
Alkaline sodium tannate as an oxygen absorber in gas analysis.
- D. B. LLOYD, *M.S.*, Glendale, Maryland.
The application of vector algebra to the field of projective geometry and to quadric inversions in particular.
- W. A. MATTHEWS, *M.S.*, Portsmouth, Virginia.
The economic value of certain cultural conditions on the yield and quality of raw and manufactured tomato stock.
- H. E. MATTOON, *M.S.*, Woodstock, Maryland.
The numbers and types of organisms found in certain products used in infant feeding.
- D. MCCREARY, *M.S.*, Mt. Pleasant, Iowa.
A study of the Bag Worm, *Thyridopteryx ephemeræformis* hawarth, with special reference to its natural enemies.
- M. E. MURRAY, *M.A.*, Mt. Savage, Maryland.
History of paper money in the Maryland Colony.
- M. W. PARKER, *M.S.*, Salisbury, Maryland.
A comparison of physical and colloidal properties of translucent and opaque sweet corn.
- R. W. RIEMENSCHNEIDER, *M.S.*, Litchfield, Illinois.
The preparation of N-Caproic acid by the decomposition of the ethyl ester of N-Butyl acetoacetic acid.

- A. E. ROSASCO, *M.A.*, Hyattsville, Maryland.
Critical study of Montaigne's *Essay de L'Amitie*.
- R. W. RUDEL, *M.S.*, Baltimore, Maryland.
The effect of copper and lead salts upon the rate of decomposition of hydrogen peroxide at various acidities.
- F. J. SLAMA, *M.S.*, Baltimore, Maryland.
A comparative study of Maryland Sennas.
- P. W. SMITH, *M.S.*, Washington, D. C.
Tariff legislation and the farmer.
- T. B. SMITH, *M.S.*, Bedford, Pennsylvania.
The decomposition of ethylene glycol in the presence of catalysts.
- T. T. TAYLOR, *M.S.*, Cumberland, Maryland.
The relative efficiency of fertilizers on bent grasses.
- G. S. WEILAND, *M.S.*, Hagerstown, Maryland.
The determination of ascaridole in *Chenopodium* oil.
- W. H. WHITE, *M.A.*, College Park, Maryland.
A study of some phases of physical education in the first group white High Schools of the Maryland Counties.
- S. H. WINTERBERG, *M.S.*, Grantsville, Maryland.
Influence of cultivation with an electric plow on soil and crop response.

Graduate fellows and graduate assistants are rendering efficient service in several departments at moderate cost. The fellowship men, at \$500 per annum, are just as capable as full-time men to do a certain type of work in the operation of our laboratories. They render valuable assistance in connection with the routine work of our field and laboratory research. They are used also as readers of students' note books and for routine work in connection with herd books, etc.

The graduate assistants, at \$1,000 per annum, render service in connection with the research of the Experiment Station and they also conduct freshman laboratory and quizz sections under the direction of a full-time instructor. The University obtains this efficient service at a low cost through the Graduate School because these young men and women are seeking higher degrees. The University is also assisting the superior students to train themselves to carry on in the field of higher education and research.

The fellowship item in the Graduate School budget fund should be increased from \$4,500 per annum to \$6,000 or \$7,000 per annum to meet the present demands.

Respectfully submitted,

C. O. APPLEMAN,
Dean.

College of Home Economics

To the President of the University:

The College of Home Economics, in planning its various curricula, has had three objectives: first, to instill in young women an appreciation and a capacity for an interesting and worth-while life; second, to prepare them for home-making; third, to give them a means of livelihood. To carry out these aims, the College has three administrative departments: namely, Foods and Nutrition; Textiles, Clothing and Art; and Home and Institutional Management. At the present time the art courses are organized with textiles and clothing, but as the art work expands, a separate department will be established.

The Department of Home and Institutional Management has the management of the dining hall and the laundry in addition to its class work. About thirty students are given employment by this department.

Subject matter is given by the College of Home Economics for the Department of Home Economics Education, which is organized within the College of Education. Students preparing to teach home economics are registered in this department.

Since the last biennial report, very attractive new quarters have been provided for the College of Home Economics. The old Chemistry Building was very successfully remodelled and redecorated for this purpose. Being housed in a separate building has brought the home economics students and faculty into closer relationship.

Two new staff members have been added, an instructor in textiles and clothing in 1929 and one in foods and institutional management in 1930. With this additional personnel, a few new courses have been offered and others have been revised.

Graduate work is being organized, with the Department of Foods and Nutrition as the first to set up such courses. As demands increase and time and personnel permit, other fields will be opened.

Plans are made to make the summer school courses in home economics meet the needs of our own graduates, who are returning in greater numbers each year for work toward a Master's Degree. Each summer brings a more general demand for graduate and a less demand for undergraduate work in home economics.

The first semester of the senior year has been divided into three units, each unit representing one five credit course lasting about six weeks each. The senior home economics class is divided into groups of five or six; while one group is doing practice teaching, another is doing home management and a third child study, the latter includ-

ing observation and practice at the Child Research Center in Washington. Home management and child study are required of each home economics senior; the third unit is elective and may be practice teaching, research in foods, textiles or clothing, or practice in institutional management. This plan has been put into use, in order that the above courses which require observation and practice, often away from the campus, may be carried without the interruption, or conflicts caused by attending other classes.

During the fall of 1930 two young women spent one of these units at the Smithsonian Institution, engaged in a piece of textile research under the general supervision of the Director of Textiles and our Home Economics Faculty.

Each year there is a greater tendency among the home economics students to work during the vacation period, in department stores, hospital dietary departments, summer hotels or tea rooms. Such experience is invaluable to students. They gain a better understanding of their college courses and of the possibilities of specialization. With such experience they can get positions more readily after graduation.

Last year a Mothers' Day was inaugurated to better the understanding of parents concerning the actual college work of their daughters. A luncheon, exhibitions and trips around the campus were included in the program. Many letters expressing hearty approval of the plan were received afterwards.

The Home Economics Staff, through a committee, has done valuable placement work for students within the past few years. The past two commencements have found the majority of our graduates with positions for the following year. The graduates of the College of Home Economics are engaged in various types of work: namely, teachers in secondary schools and colleges; dietitians in institutions and hospitals; stylists and buyers in department stores; editorial staff workers; home economics specialists in extension work; dairy councils and dairy manufacturing concerns. Two of our recent graduates hold fellowships at the Washington Child Research Center.

A survey has been undertaken to determine whether the home economics curricula are meeting the demands of the students. This is being done through questionnaires and letters to graduates; through conferences and meetings with the staff and the present student body; and through inquiries from employers of graduates. Therefore, from time to time, curriculum changes will be made.

Very respectfully,

M. MARIE MOUNT,
Dean.

School of Medicine

To the President of the University:

The School of Medicine for the present year has 413 students enrolled, of whom 165 are residents of the State of Maryland. In 1929-1930, the enrollment was 419, of whom 155 were residents. The number recommended for the degree of Doctor of Medicine in June, 1930, was 87; for the previous year this number was 101. Continuing its educational efforts beyond the stage of routine instruction, the School has provided for the hospitals of Baltimore and Maryland about 140 interns a year for the biennium past.

The School of Medicine furnishes heads of departments and visiting physicians for the University Hospital. It assists, moreover, in the conduct of the work at Mercy Hospital and the Baltimore City Hospitals at Bay View. At both the University Hospital and Mercy Hospital, general out-patient departments are maintained, to which approximately 100,000 visits are made annually by those seeking medical aid. Under the auspices of the University Hospital, the Obstetrical Clinic has delivered 1,243 women in their homes during the past year; and the deliveries performed in the year previous were not far below this number. The Babies' and Children's Clinic, operating under the same auspices, has kept up its work among the needy families in the vicinity, visits for the past two years totalling about 21,000.

During the past two years there has been a considerable addition to the equipment of the University Hospital. (1) An oxygen chamber affording unique control of the chemical and physical properties of the atmosphere has been installed at a cost of \$17,500, generously donated by a number of persons interested in the welfare of the Hospital. Its addition greatly increases the effectiveness of the Hospital in acute respiratory diseases and allied troubles. (2) A Cancer Clinic has been opened for the purpose of relieving sufferers from this disease and also for much needed research. (3) The establishment of the Looper Clinic has greatly augmented the facilities for nose and throat work. (4) The Hundley Cystoscopic Clinic has brought to the Hospital unusual opportunities for surgical urology. (5) The Obstetrical Wing of the Hospital has undergone alterations which have made possible the incorporation of more modern and more efficient equipment.

During the summer of 1930, new laboratories were provided for Pathology, Bacteriology, Immunology and Biological Chemistry. These

laboratories have been equipped in a highly efficient manner and are splendid additions to the facilities of the School.

For several years the School has systematically pursued a program of medical extension work aimed at giving the practicing physicians, both in Baltimore and the Counties, an opportunity to keep abreast with recent developments in medical science. The program includes at present the following activities:

I. Thursday afternoon clinics are given at the University throughout the winter by prominent teachers in medicine, surgery and the specialties. These teachers are drawn from Baltimore and other medical centres of the country. The clinics are attended largely by physicians from Baltimore and the neighboring counties. The average attendance at each clinic is about 200.

II. Annually, in June, an intensive course of three weeks is given for physicians of the State. Lectures, ward rounds, clinics, dispensary and laboratory work are included in this intensive curriculum.

III. Post-graduate instruction for physicians is afforded, the physicians being enrolled in the Medical Out-Patient Department for a period of two years. Here they are in attendance for a two and one-half hour period three times a week. The last hour of each period is given to instruction by clinics, lectures and ward rounds.

IV. During the summer months, extra-mural review courses are given in the cities and towns of Maryland in which a group of physicians is organized to pursue such courses. The work covers infant feeding, and diseases of the heart and lungs. During the summer of 1930, courses of this nature were conducted at Cumberland and Frederick.

A cultural course of ten lectures on the History of Medicine has been given by Dr. John Rathbone Oliver during the spring quarter of each of the last two years. These lectures, which are open to the students and local physicians, have proved to be a very popular adjunct to the curriculum.

In addition to the work indicated above, the facilities of certain of the pre-clinical departments have been so organized that the School of Medicine, in co-operation with the Graduate School, now offers work leading to the degree of Master of Arts and Doctor of Philosophy.

Very respectfully,

J. M. H. ROWLAND, M.D.,
Dean.

1931

To the President of the University:

I have the honor to present herewith the biennial report of the University Hospital, University of Maryland, for the years 1929-1930. You will note that the hospital has kept up its usual standards, both as to economy and efficiency. The usual unsatisfactory condition of the hospital has had to be contended with, but in spite of this handicap, a large number of patients have been received and benefited by their experience here.

The deplorable conditions of our various facilities in the hospital are too well known to need repetition, but the need for new facilities in the way of a new hospital is more than ever apparent. The general upkeep of the buildings has been difficult owing to their rapid deterioration, and the fire hazard of these badly constructed buildings is an ever-increasing menace.

At this time of the year with so many people suffering from financial depression or total absence of resources, the demand made upon the hospital has been serious and disheartening. As the hospital usually runs to capacity this has been all the more trying and a large number of people are turned away.

Our expectation of assistance in the way of a new building has been well sustained by the splendid recommendation presented to the Legislature by His Excellency, the Governor. The whole Staff and personnel are buoyed up at the present time with the hope that these expectations will materialize.

The general statistics of the hospital for the biennial period are herewith presented, as well as a short financial statement of income and disbursement.

Very respectfully,

A. J. LOMAS, M.D.,
Superintendent.

UNIVERSITY HOSPITAL—UNIVERSITY OF MARYLAND

HOSPITAL ADMISSIONS

| | 1923-29 | 1929-30 | Total—Two Years |
|-----------------------------------|---------|---------|-----------------|
| Private and Semi-Private..... | 1,255 | 1,371 | 2,626 |
| Part Pay..... | 1,803 | 1,947 | 3,750 |
| Free—City..... | 1,034 | 1,132 | 2,166 |
| Free—State..... | 1,164 | 1,231 | 2,395 |
| Total Admissions to Hospital..... | 5,256 | 5,681 | 10,937 |

HOSPITAL DAYS

| | | | |
|-------------------------------------|--------|--------|---------|
| Private Patient Days..... | 16,210 | 16,998 | 33,208 |
| Part Pay Patient Days..... | 25,760 | 27,027 | 52,787 |
| Free—City Patient Days..... | 17,639 | 20,641 | 38,280 |
| Free—State Patient Days..... | 18,778 | 19,514 | 38,292 |
| Total Patient Days in Hospital..... | 78,387 | 84,180 | 162,567 |

| | | | |
|--|------|------|------|
| Cost Per Person Per Day, Operating Expense Only..... | 4.59 | 4.53 | 4.56 |
| Cost Per Patient Day, Including Capital Outlay..... | 4.64 | 4.67 | 4.65 |
| Allowance Per Day, City Free Patients..... | 1.55 | 1.55 | 1.55 |
| Allowance Per Day, State Free Patients..... | 1.41 | 1.47 | 1.44 |
| Estimated Cost Per Day, Ward Patients..... | 4.00 | 4.00 | 4.00 |

GENERAL DISPENSARY

(Includes all Clinics except State V. D. Clinic and Accident Room)

| | 1923-29 | 1929-30 | Total—Two Years |
|-------------------|---------|---------|-----------------|
| Old Patients..... | 65,878 | 75,127 | 141,005 |
| New Patients..... | 20,448 | 23,530 | 43,978 |
| Total..... | 86,326 | 98,657 | 184,983 |

ACCIDENT DEPARTMENT

| | | | |
|-------------------|--------|--------|--------|
| Redressings..... | 9,178 | 8,269 | 17,447 |
| New Patients..... | 8,768 | 9,133 | 17,901 |
| Total..... | 17,946 | 17,402 | 35,348 |

DEATHS

| | 1928-29 | 1929-30 | Total—Two Years |
|---|--------------|---------------------|-----------------|
| Institutional | 238 | 258 | 496 |
| Within 24 hours of Admission | 71 | 102 | 173 |
| Infants | 14 | 17 | 31 |
| Total | 323 | 377 | 700 |
| MATERNITY | | | |
| Patients Admitted—Mothers | 368 | 450 | 818 |
| Babies Born | 307 | 405 | 712 |
| Babies Stillborn | 42 | 28 | 70 |
| Babies Premature | 31 | 52 | 83 |
| Babies Died | 14 | 14 | 28 |
| Maternal Deaths | 9 | 14 | 23 |
| OUT-PATIENT OBSTETRICS | | | |
| Patients Registered in Dispensary | 1,656 | 1,796 | 3,452 |
| Patient Visits to Dispensary | 7,546 | 8,633 | 16,179 |
| White Patients Delivered in Homes | 167 | 185 | 352 |
| Colored Patients Delivered in Homes | 872 | 1,009 | 1,881 |
| Total Deliveries | 1,039 | 1,194 | 2,233 |
| Home Visits to Patients | 21,517 | 26,568 | 48,085 |
| OPERATING ROOM | | | |
| Major Operations | 1,700 | 1,749 | 3,449 |
| Minor Operations | 652 | 597 | 1,249 |
| Mastoid Operations | | 29 | 29 |
| Eye, Ear, Nose and Throat | 509 | 611 | 1,120 |
| Broncoscopies and Laryngoscopies | | 88 | 88 |
| Fractures Reduced and Casts Applied | 265 | 267 | 532 |
| Caesarean Sections | 29 | 60 | 89 |
| Total Operations | 3,155 | 3,401 | 6,556 |
| Surgical Dressings | 753 | 753 | 1,506 |
| Examinations | 573 | 640 | 1,213 |
| Total Number of Patients | 4,481 | 4,794 | 9,275 |
| General Anaesthetics | 2,450 | 2,745 (Avertin 319) | 5,195 |
| Local | 358 | 369 | 727 |
| Spinal | 81 | 111 | 192 |
| Caudal | 16 | 37 | 53 |

UNIVERSITY HOSPITAL—UNIVERSITY OF MARYLAND—Continued.

CASH RECEIVED

| | 1929-30 | Total—Two Years |
|-------------------------------------|---------------------|---------------------|
| Patients— | | |
| State of Maryland | \$ 56,500.00 | \$109,000.00 |
| Private Patients | 89,524.06 | 176,228.06 |
| Ward Patients | 110,625.24 | 211,746.63 |
| Operating Room Fees | 22,188.40 | 42,855.90 |
| X-Ray Diagnostic | 31,196.83 | 58,305.36 |
| X-Ray Therapeutic | 293.50 | 728.50 |
| Accident Room | 9,244.08 | 18,376.50 |
| Dispensary | 4,300.16 | 9,006.26 |
| Laboratory | 10,041.17 | 19,055.37 |
| Nurses' Board | 14,150.75 | 28,146.20 |
| Anaesthetist | 6,719.75 | 12,162.25 |
| Drugs and Medicines | 10,290.06 | 19,105.83 |
| Children's Clinic | 35.42 | 60.46 |
| Medical and Surgical Supplies | 2,806.53 | 4,948.72 |
| Cystoscopy | 794.15 | 1,394.15 |
| Physiotherapy | 1,219.85 | 1,913.20 |
| Electrocardiogram | 225.00 | 730.00 |
| Miscellaneous— | | |
| Telephone and Telegram | 806.08 | 1,493.84 |
| Commissions and Discounts | 867.51 | 4,007.18 |
| Cots and Meals | 869.50 | 1,871.25 |
| Sundry Receipts | 14,970.90 | 23,240.65 |
| Refund Maintenance | 250.00 | 250.00 |
| Donations | 21,852.37 | 26,729.16 |
| Total Cash Receipts | \$409,521.31 | \$771,355.47 |

UNIVERSITY HOSPITAL—UNIVERSITY OF MARYLAND—Continued.

CASH DISBURSED

| Substance— | 1928-29 | 1929-30 | Total—Two Years |
|------------------------------------|-------------|-------------|-----------------|
| Butter and Eggs..... | \$ 9,147.73 | \$ 8,622.37 | \$ 17,770.10 |
| Milk and Cream..... | 14,730.72 | 14,698.46 | 29,429.18 |
| Poultry, Meat and Fish..... | 23,747.17 | 21,007.61 | 44,754.78 |
| Fruits and Vegetables..... | 9,283.99 | 11,046.01 | 20,330.00 |
| Groceries and Provisions..... | 15,518.39 | 17,908.70 | 33,427.09 |
| Housing— | | | |
| Household Supplies..... | 6,883.53 | 6,242.34 | 13,125.87 |
| Laundry Supplies..... | 1,597.48 | 1,937.22 | 3,534.70 |
| Fuel..... | 10,232.12 | 20,925.44 | 31,157.56 |
| Dry Goods and Notions..... | 7,646.37 | 6,614.82 | 14,261.19 |
| Gas and Electricity..... | 5,555.06 | 5,531.28 | 11,086.34 |
| Water Rent..... | 404.47 | 859.77 | 1,264.24 |
| Medical Care and Attention— | | | |
| Drugs and Medicines..... | 7,292.72 | 8,568.98 | 15,861.70 |
| Medical and Surgical Supplies..... | 23,967.52 | 27,248.11 | 51,215.63 |
| Laboratory Supplies..... | 2,392.13 | 1,996.89 | 4,389.02 |
| Teaching and Training Nurses..... | 1,805.98 | 3,104.67 | 4,910.65 |
| Nurses' Home Expense..... | 4,092.53 | 5,278.72 | 9,371.25 |
| X-Ray Diagnostic..... | 3,633.85 | 3,776.68 | 7,460.53 |
| X-Ray Therapeutic..... | 542.18 | ..... | 542.18 |
| Maintenance of Property— | | | |
| Materials for Repairs..... | 12,286.28 | 14,179.58 | 26,465.86 |
| Repairs to Instruments..... | 954.96 | 1,103.52 | 2,058.48 |
| Renewals and Replacements..... | 5,954.83 | 6,797.37 | 12,752.20 |

UNIVERSITY HOSPITAL—UNIVERSITY OF MARYLAND—Continued.
CASH DISBURSED—Continued.

| | 1928-29 | 1929-30 | Total—Two Years |
|---------------------------------------|---------------------|---------------------|---------------------|
| Pay Roll— | | | |
| Salaries and Wages..... | 178,670.56 | 179,956.70 | 358,627.26 |
| Administration— | | | |
| Telephone and Telegraph..... | 2,848.54 | 2,978.20 | 5,826.74 |
| Office Supplies and Expense..... | 903.45 | 1,317.16 | 2,220.61 |
| Postage..... | 736.20 | 885.11 | 1,621.31 |
| Printing..... | 1,701.98 | 2,412.13 | 4,114.11 |
| Miscellaneous— | | | |
| Freight and Hauling..... | 1,093.84 | 1,090.06 | 2,183.90 |
| Carfares..... | 435.87 | 422.52 | 858.39 |
| Insurance..... | 437.11 | 431.87 | 868.98 |
| Refunds and Discounts..... | 2,588.39 | 1,650.90 | 4,239.29 |
| Sundries..... | 2,670.05 | 3,073.74 | 5,743.79 |
| Betterments— | | | |
| Improvements to Buildings..... | 666.66 | 7,364.96 | 8,031.62 |
| New Equipment..... | 3,059.17 | 5,052.33 | 8,111.50 |
| Total Cash Disbursed..... | <u>\$363,531.83</u> | <u>\$394,084.22</u> | <u>\$757,616.05</u> |
| Accounts Payable, October 1st..... | None | | |
| Cash on Hand, October 1st..... | \$ 6,842.72 | \$ 5,145.05 | \$ 11,987.77 |
| Total Cash Received..... | 361,834.16 | 409,521.31 | 771,355.47 |
| Total Cash Disbursed..... | 363,531.83 | 394,084.22 | 757,616.05 |
| Receipts Over Disbursements..... | | 15,437.09 | 15,437.09 |
| Disbursements Over Receipts..... | 1,697.67 | | 1,697.67 |
| Cash on Hand, September 30th..... | 5,145.05 | 20,582.14* | 25,727.19 |
| Accounts Payable, September 30th..... | None | None | |

*Includes special donations for the construction of Oxygen Chambers and Air Conditioning Chambers which construction was not completed and unbilled to us in September 30th, 1930.

School of Nursing

To the President of the University:

I present herewith the report of the School of Nursing covering the period from January 1, 1930 to January 1, 1931.

| | |
|-------------|---|
| Assistants: | |
| Day | 1 |
| Night | 1 |

| | |
|----------------|---|
| Instructors: | |
| Theory | 1 |
| Practice | 2 |

| | |
|----------------------|---|
| In Charge: | |
| Dispensary | 1 |
| Operating Room | 1 |
| Maternity | 1 |
| Nurses' Home | 1 |

| | |
|--|---|
| Head Nurses: | |
| Lower Halls | 1 |
| Upper Halls | 1 |
| Wards A-B | 1 |
| Ward G | 1 |
| Ward H | 1 |
| Ward I | 1 |
| Children's Ward | 1 |
| Assistants in Operating Room | 2 |
| Surgical Supply Room | 1 |
| Accident Room | 1 |
| Outside Obstetrics—Prenatal | 2 |
| Outside Obstetrics—Delivery | 2 |
| Outside Obstetrics—Post-partum | 2 |
| Baltimore and Ohio Dressing Room | 1 |
| Oxygen Chamber | 2 |

| | |
|---|---|
| Pupil Nurses Filling Head Nurses' Positions: | |
| Colored Women's and Men's Medical and Surgical Ward | 1 |

| | |
|---------------------|----|
| Student Nurses: | |
| Graduates | 1 |
| Seniors | 28 |
| Intermediates | 27 |
| Juniors | 7 |
| Probationers | 34 |

| | |
|---|----|
| Total Number of Student Nurses at Present | 97 |
|---|----|

| | |
|--------------------------------------|-------|
| Special Nurses: | |
| Total Number of Special Nurses | 1,179 |

Illnesses:

During the year one hundred twenty-five nurses were off duty for varying lengths of time because of illness. Of these nineteen

were admitted to the Private Halls or Sydenham Hospital for treatment and the remainder cared for in the Nurses' Home.

Causes of Admission into the Hospital were:

| | |
|--|-----|
| Appendectomy | 7 |
| Scarlet Fever | 1 |
| Infection | 3 |
| Otitis Media | 1 |
| Diphtheria | 1 |
| Menorrhagia | 1 |
| Furunculosis | 1 |
| Pneumonia | 1 |
| Follicular Tonsillitis | 1 |
| Sinusitis | 1 |
| Tonsillitis—Vincent's Angina | 1 |
| Total Number of Days Lost Through Illness..... | 734 |

| | Graduates | Seniors | Inter- mediates | Juniors | Probationers | |
|---------------------------------|-----------|-----------|--------------------|------------|--------------|-----|
| Jan. | | | 33 | 52 | 72 | |
| Feb. | | | 32 | 2 | 101½ | |
| Mar. | | | 19 | | 33 | |
| Apr. | | 2 | 36 | 29 | 58 | |
| May | | 5 | 27 | 27 | 11½ | |
| June | | 13 | 9 | 5 | 16 | |
| July | 1 | 2 | 15 | | 1 | |
| Aug. | | | 13½ | 1 | | |
| Sept. | 10 | 17 | 11 | | | |
| Oct. | | 9 | 13 | 13 | | |
| Nov. | | | 20½ | | 6 | |
| Dec. | | 8 | 1 | | 9 | |
| | <u>11</u> | <u>56</u> | <u>230</u> | <u>129</u> | <u>308</u> | |
| Total Number of Nurses Ill..... | | | | | | 125 |

| | Graduates | Seniors | Inter- mediates | Juniors | Probationers |
|------------|-----------|-----------|--------------------|-----------|--------------|
| Jan. | | | 5 | 4 | 12 |
| Feb. | | | 6 | 1 | 15 |
| Mar. | | | 7 | | 8 |
| Apr. | | 1 | 4 | 5 | 8 |
| May | | 1 | 2 | 3 | 4 |
| June | | 3 | 3 | 1 | 2 |
| July | 1 | 1 | 3 | | 1 |
| Aug. | | | 2 | 1 | |
| Sept. | 1 | 1 | 2 | | |
| Oct. | | 2 | 2 | 1 | |
| Nov. | | | 6 | | 2 |
| Dec. | | 1 | 1 | | 2 |
| | <u>2</u> | <u>10</u> | <u>43</u> | <u>16</u> | <u>54</u> |

| | |
|---|-----|
| Requests for Information and Admission..... | 354 |
| Number of Applications Accepted for the February Class..... | 15 |
| Number of Students Entered in February Class..... | 12 |
| Number of Applicants Accepted for the October Class..... | 40 |
| Number of Students Entered in October Class..... | 38 |

Resignations:

Ruth Young—Outside Obstetrical Nurse—Delivery Service.
Alice Bennett—Night Supervisor.
Rhae Gerber—Assistant Supervisor Operating Room.
Cora Mason Wilson—Supervisor Surgical Supply Room.

New Appointments:

Eva Mae Bradburn—Assistant Supervisor Operating Room.
Graduate University of Maryland School of Nursing, 1929.
Margaret Currens—Head Nurse Lower Halls.
Graduate University of Maryland School of Nursing, 1928.
Grace Dutterer—Outside Obstetrical Nurse—Delivery Service.
Graduate University of Maryland School of Nursing, 1930.
Harriet Schroeder—Outside Obstetrical Nurse—Post-partum Service.
Graduate University of Maryland School of Nursing, 1904.
Hilda Willis—Outside Obstetrical Nurse—Delivery Service.
Graduate University of Maryland School of Nursing, 1929.
Bertha Tarun—Outside Obstetrical Nurse—Delivery Service.
Graduate University of Maryland School of Nursing, 1930.
Gladys Adkins—Assistant Supervisor Operating Room.
Graduate University of Maryland School of Nursing, 1930.
Naomi Allen—Supervisor Oxygen Chamber.
Graduate University of Maryland School of Nursing, 1926.
Eva Laigne—Supervisor (Night)—Oxygen Chamber.
Graduate University of Maryland School of Nursing, 1930.
Elizabeth Trice—Supervisor Surgical Supply Room.
Graduate University of Maryland School of Nursing, 1930.

Reappointments:

Frances Branley—Assistant Superintendent of Nurses.
Helen Wright—Instructor in Practical Nursing.
Lillie Hoke—Instructor in Theoretical Nursing.
Bertha Hoffman—Assistant Instructor in Practical Nursing.
Elizabeth Aitkenhead—Supervisor Operating Room.
Jane Moffatt—Supervisor General Dispensary.
Elizabeth Cannon—Head Nurse Men's Surgical Ward.
Lucy Brude—Supervisor Upper Halls.
Estelle Baldwin—Head Nurse Ward C.
Beatrice Krause—Supervisor Maternity.
Emma Winship—Supervisor Accident Room.
Freda Fazenbaker—Head Nurse Wards A-B.
Grace Thawley—General Night Duty Upper Halls.
Grace Dick—Head Nurse Ward G.
Stella Ricketts—Outside Obstetrical Nurse—Pre-natal Service.
Catherine Rodenwald—Outside Obstetrical Nurse—Pre-natal Service.

Temporary Appointments:

Grace Young—Head Nurse Lower Halls—Ward C—Ward G.
Naomi Allen—Head Nurse Ward H—Upper Halls—Wards A-B—Ward I.
Ruth Young—Head Nurse Maternity—Night Supervisor.
Mildred Rankin—Head Nurse Accident Room.
Alice Bennett—Head Nurse Upper Halls.
Dora Baker—Supervisor Surgical Supply Room.
Marie Conner—Assistant Supervisor Operating Room.

Transfers:

Grace Dutterer—Head Nurse Ward I from Outside Obstetrical Nurse.

Vesta Swartz—Night Supervisor from Head Nurse Ward I.

Evelyn Zapf—Outside Obstetrical Nurse—Post-partum Service from Delivery.

Deceased:

Martha Magruder—Head Nurse Lower Halls.

Respectfully submitted,

ANNIE CRIGHTON, R. N.,

Superintendent of Nurses.

The School of Law

To the President of the University:

The past two years have been most important ones in the history of the School of Law. The great need of the school for adequate physical facilities, stressed in the last two biennial reports, was met by the appropriation made by the last legislature for a new Law School building, which is now in process of construction.

In December 1929, the Council on Legal Education of the American Bar Association placed the school on the list of Approved Schools. The "Class A" rating so attained was the goal toward which the school had been working for some years and the importance of such recognition cannot be over estimated, both from the standpoint of the prestige of the school and of the University and from the standpoint of benefit to the State of Maryland as a whole.

In December, 1930, the school was admitted to membership in the Association of American Law Schools, which is a further indication of the progress made by the school in raising the standards of legal education in Maryland; the requirements for membership in said Association being somewhat more exacting than those set for a "Class A" rating by the American Bar Association. This also is of very great importance from the standpoint of the prestige of the school among other law schools in this Country.

The increased entrance requirements that became fully effective in 1927-28 have resulted in a material decrease in student enrollment. This was expected and is believed to be desirable from many standpoints; throughout the Country, leaders of both bench and bar have become increasingly alarmed at the large number of applicants for admission to the bar, many of them poorly trained and with low moral and ethical standards. The requirement by the American Bar Association of a minimum of two years of college work for entrance to a "Class A" school was made expressly for the purpose of confining those who sought admission to the bar to such men as by their training and character were fitted to pursue the practice of law as a profession. However, the entering class this year showed an increase over those of the past two years and it is believed that a further increase may be looked for in the future. From the standpoint of the quality of students now enrolled, the present student-body is as a whole superior in every way to those of former years; this, it is submitted, is in itself a justification for the increased standards of admission.

The curriculum of the school has been subjected to considerable revision and will undoubtedly be revised further during the present biennium. The question is one that is being given a great amount of consideration by law schools throughout the Country.

The full-time faculty has not been increased in number since the last report, primarily because of lack of office space. It is planned, however, to effect some increases in the full-time staff during the present biennium.

Extensive additions have been made to the library, but due to lack of shelf space in our present quarters, we have been unable to do as much along these lines as is requisite and it will be necessary for very considerable additions to be made in the future; adequate shelf space will be available in the new building.

The outstanding needs of the law school are:

(1) Adequate maintenance appropriations to enable us to maintain our existing standards and to seek improvement in the future; while, as stated, some increase in student enrollment may be expected, it is most unlikely that this will ever approach the enrollment of former years; and any marked increase will mean additional expense of instruction, if we are to continue giving proper legal education.

(2) Further increase in the library; to obtain a really adequate and satisfactory library, the expenditure of approximately \$10,000.00 for additions, exclusive of continuations, will be required over the next few years.

Respectfully submitted,

HENRY D. HARLAN,
Dean.

School of Dentistry

To the President of the University,

I have the honor to present the following report for the School of Dentistry for the biennium ending September 30, 1930.

The School of Dentistry has within the past two years graduated its last class admitted direct from high school to the course in dentistry and the first class admitted in accordance with the higher standard of one year college work as the minimum pre-dental requirement. While the change to higher requirements has resulted in a lessened total enrollment, the outlook for a return of enrollment to maximum figures is most encouraging. The following comparative figures for the first year of the last biennium and the 1929-30 session will illustrate the effects of increased standards of admission on enrollment:

| | 1926-27 | 1929-30 |
|------------------|-----------|-----------|
| Pre-Dental | 69 | 98 |
| Freshman | 40 | 103 |
| Sophomore | *97 | 73 |
| Junior | *99 | 55 |
| Senior | *104 | 35 |
| | <hr/> 409 | <hr/> 364 |

In addition to the gradually increasing number seeking enrollment, a noticeable improvement is observed in the capacity of those asking admission. The effect of increased standards has so far been most gratifying.

The new dental building was occupied at the opening of the regular session 1929-30. The accommodations provided in the new quarters meet practically every need for instruction offered in the dental school, only one course now being conducted in quarters outside of the new building. The building was designed to accommodate a fixed maximum enrollment, all class rooms, laboratories, clinic rooms and accessories were arranged and equipped to satisfy the requirements for suitable instruction to this limited number. The equipment of the building is modern in every respect; the class rooms and laboratories are provided with every facility for adequate instruction; the clinics are fully provided throughout with every modern improvement in dental equipment. An added feature to the teaching facilities, heretofore lacking, is the splendid reading room, used jointly with the School of Pharmacy, and stack rooms for the accommodation of the rapidly

* Classes admitted on minimum requirement of graduation from high school.

growing library material. It is of sufficient interest to record that a fifteen thousand dollar endowment of the dental library by the Maryland State Dental Association, the proceeds of which are being used to add to the reading material, has been an important factor in its success. An amount of fifteen hundred dollars has been awarded the library by the Carnegie Foundation, which is now being used to augment available reading material. We are pleased to report that the school was inspected by a committee representing the Dental Educational Council of America, which reported favorably upon our claim to a reclassification. The report was approved by the Council which announced the elevation of the School to a Class A rating.

In our last report we referred to the increased quantity and improved quality of instruction for that period. We are pleased to report still further progress in this respect. Very few changes have been made through resignations in the personnel of the teaching staff. The added experience of individual teachers for these continued years of training has been an important factor in improving the quality of instruction offered. In addition, we have been fortunate to secure a number of capable instructors, among them two very able experienced full time instructors, who add much to the strength of the teaching staff.

There has been a marked increase in clinic activities. The large infirmary is now serving both public and student to a very splendid extent. There has been a substantial increase in the work done in the new clinic rooms, which has now reached the capacity of the present student enrollment and promises to remain at the point of saturation as the number of student operators increase. This contributes not only to the necessary instruction designed for student development, but offers opportunity for an element in the community to avail itself of a splendid service at a reasonable cost.

The future educational policy of the School of Dentistry will be influenced to a degree by trends in theory of dental education. The present minimum requirement for admission is thirty semester hours of college work, while the dental course extends over four collegiate years. In certain localities there are variations from this fixed minimum requirement, some dental schools requiring two years pre-dental and four years in the dental course, while others require two years pre-dental and three years in the dental course, the later being equivalent to the one-four minimum requirement. These differences are a source of concern to educators and in order to arrive at a rational solution, the American Association of Dental Schools is now conducting a curriculum survey in the hope that a definite policy may be adopted for all dental schools. We await the report of this committee as a possible factor in influencing changes in the local policy.

The School of Dentistry is now working out plans for two important improvements, namely, post-graduate courses to be offered the

alumni and others seeking self-improvement and extension courses to be made available to the dentists of Maryland. Both of these functions are most important factors in professional progress and can be provided only through organized dental education. Certain problems in research are claiming the attention of members of the faculty, preliminary reports on some having been made and published in leading dental journals. One member of the faculty has recently published a manual for laboratory teaching which has met with much favor as indicated by its adoption as a guide in a number of dental schools. It is pleasing to note that the instructors in the school have responded to many requests for contributions to the programs of dental organizations, all of which have been favorably received. The healthy growth and substantial improvements of the last two years should be a source of satisfaction to all.

Respectfully submitted,

J. BEN ROBINSON,
Dean.

School of Pharmacy

To the President of the University:

The School of Pharmacy moved into the new building, erected to accommodate its activities, during the Christmas holidays of 1929, but for the greater part of the biennium ended September 30, 1930, the work was carried on in the old quarters, hence this report deals in the main with the progress made under conditions which were bad with respect to housing, and which no longer exist.

As it was definitely known at the beginning of the biennium that a new building to accomodate the work of the school was to be erected in the immediate future, no effort was expended in attempting to correct bad conditions due to inadequacy of space and facilities, but every effort was made to improve conditions in other respects as it was realized that such improvements could be capitalized upon as soon as the new quarters became available. Attention was therefore focused upon the outlining of courses of instruction, the perfection of the organization of the work of the different departments, and the building up of an adequate instructional staff.

Owing to the over-crowded condition of the old quarters and the lack of an adequate number of class-rooms and laboratories, it was impossible to give the full amount of classroom and laboratory work required for standard university courses. Hence we were able to conduct our work with a comparatively small instructional staff. The reorganization of the work to place it on a sound basis, therefore, entailed an increase in the number of teachers. In 1928 the instructional staff was, therefore, increased by three, and in 1929 the staff was further enlarged by the addition of nine more teachers, making a total of 35. Even with these additions there still remained three departments that were undermanned, namely, the department of pharmacy, the department of bacteriology, and the department of physiological drug testing. Each of these departments should have an additional instructor to function properly.

The building up of the library, which was begun in earnest during the past biennium, has continued to progress satisfactorily. The acquisitions in the way of books and periodicals have been greater than expected, and have been due in a large part to substantial gifts made by the Alumni and others interested in the School. A librarian and a cataloger have been employed on a full time basis so that it can now be said that our library is properly taken care of. If the present

rate of growth continues additional space to house the library will be required within the next three or four years.

The additional room and facilities in the new building has greatly stimulated graduate work. Already 19 students have registered for the fourth year of work leading to the Bachelor's Degree, and 9 students are taking work in the various departments of the School leading to the Degree of Master of Science.

The School of Pharmacy, with the 57 other member schools of the American Association of Colleges of Pharmacy, will discontinue the three year course in the Fall of 1932, and begin the four year course. This means that we must begin to reorganize our work now so that it will be disturbed as little as possible when the change becomes effective. It is our plan, therefore, to begin the alteration of courses at this time so that they may become operative gradually and to also build up our instructional staff with the view to meeting the increased teaching load which will be the result of extending the course from a minimum of three years to a minimum of four years of work.

The occupancy of larger and better quarters, the broadening of the courses of instruction and the additions to the instructional staff which this has entailed has increased the cost of maintenance to a marked degree. Additional funds will, therefore, be required to carry on the work of the School in the future, as our fees are already as high if not higher than those charged by schools of pharmacy in the immediate vicinity, it is hoped that the Legislature will see the necessity for increasing the state appropriation for maintenance and that such increased appropriation as is needed will be made in the near future.

Respectfully submitted,

A. G. DU MEZ,
Dean.

Report of the Dean of Women

To the President of the University:

The position of Dean of Women was created at the University of Maryland in 1922. At that time there were 94 women students enrolled at the University. This present year 323 women have registered. This department is organized like other administrative departments. The Dean of Women is the head and is held responsible for the program of work, for the administration of this program and for its "output." However, the fact that the department is both an administrative and a personnel office makes necessary space to practice and perfect the ideals of human relationship as well as space to direct the purely administrative work.

It is very difficult to define in exact terms the duties of the Dean of Women. A large part of them would certainly fall under the head of miscellaneous. However, they may be classified under:

Administrative—

1. Planning and directing the program of work for her office;
2. Representing women's interests officially to faculty, to the administration and to the public generally;
3. Interviewing prospective students and their parents;
4. Record keeping;
5. Correspondence.

Academic—

1. Teaching;
2. Advising students as to courses and programs;
3. Emphasizing value of studies;
4. Making academic adjustments.

Social—

1. Making contacts to know students as persons;
2. Maintaining standards of good taste in social affairs;
3. Offering hospitality in the name of the institution;
4. Guiding student social affairs.

Personnel—

1. Extra-curricula activities;
2. Vocational guidance;
3. Housing
 - a. Interviewing and selecting prospective house mothers for dormitories, sororities and fraternities.
 - b. Interviewing prospective owners of off-campus houses.
4. Problems of individual students: Academic, Social, Personality and Economic.
5. Advising and cooperating with the Women's Student Government Council and the Panhellenic Association.

The outstanding needs of this department are dormitories. At the present time there is only room on the campus for 52 girls. These girls are housed in Gerneaux Hall, a frame house formerly occupied by the President when this was Maryland Agricultural College, the Home Economics Practice House and the Y Hut. The latter is extremely undesirable because it is a temporary building of tongue and groove and is a fire hazard. The legislature of 1929 gave us an appropriation for a new dormitory which will be completed by September, 1931. This will help fill a long felt want. However, with the increasing number of women students the one dormitory is not sufficient to house even our freshman girls. All freshmen should be housed on the campus. Our present arrangement of girls living all the way from Berwyn to Hyattsville is very unsatisfactory. It is impossible under such conditions to give them the proper supervision or training they should have. Stephen Leacock has said, "If a college student is to get from his college what it should give him, a college dormitory with the life in common that it brings is his absolute right." So the outstanding need of this department is another dormitory and it is hoped that this need will be recognized.

Adequate office space is a necessity which has been becoming more and more urgent in this department. At the present time the office is located in the Y Hut and is much too small. One of the greatest problems is to find space to keep the valuable records which are compiled. The dean's office should be of sufficient size to permit conferences with six or eight girls and should insure absolute privacy. If the office is to be run efficiently, if it is to give service, if it is to enrich the lives of the women students, suitable quarters are essential.

Respectfully submitted,

ADELE H. STAMP,
Dean of Women.

Physical Education for Women

To the President of the University:

The fall of 1930 saw a full time instructor employed in Physical Education for Women. This met an urgent need. Up to this time the work had been carried by the Dean of Women with student assistants. The program up to this year had consisted of tennis, basketball, bowling, track and rifle. From the beginning all extra mural sports, with the exception of rifle, which is telegraphic, have been frowned upon. Our aim has been to promote an intra-mural program. This year hockey, soccer, volleyball, field ball and archery have been added to the sports program. They have proved themselves very popular. The regular program has been supplemented with stunts, tumbling and apparatus work.

For freshmen and sophomores a course in Hygiene is given by the Dean of Women. This course is required of all freshmen and sophomore girls. One deals with personal hygiene and the other with community hygiene.

A complete physical examination is given every girl once a year by a competent woman physician. The parents are notified of physical defects which need correcting. The physical education instructor co-operates with the woman physician in giving corrective work.

The Women's Athletic Association comes under the supervision of this department and has shown a steady growth since its organization. The aim of this organization is to promote interest in athletics and sportsmanship among all the women on the campus. The program of work for this year, with its many new and varied features, has provided an added incentive to the Women's Athletic Association.

There are two chief needs in this department: First, the services of a competent woman physician one day a week. She will be available for medical advice, guidance and consultation along health lines for the girls as well as giving the medical examination. The second need is a field house and athletic field. At the present time three hundred girls are using one shower and ten lockers. Boys and girls are using the same gymnasium resulting in conflicts in schedule for regular classes and for extra-curricular activities. There is no place in which to store equipment, consequently much of it is lost. To counteract these conditions a field house should be built to take care of the physical education needs for girls. An athletic field should

be laid out near the field house. At present the only available space for a hockey and soccer field for the girls is the part of the campus that fronts on the boulevard. This is undesirable from every viewpoint. An added disadvantage is that when the R. O. T. C. wants to use that space for drills all of the girls' games have to be called off. An athletic field, near a field house and gymnasium, providing adequate space for girls' games and sports would overcome these handicaps and facilitate the development of athletics for girls at the University.

Respectfully submitted,

ADELE H. STAMP,
Dean of Women.

The Library—(College Park)

To the President of the University:

This report marks the end of an old phase in the history of the Library and the beginning of a new one, brought about by the construction of the new Library.

An idea of the activities of the Library during the biennium, October 1, 1928, to September 30, 1930, may be gained by the figures given below:

Staff and Hours

There are four members of the staff besides student assistants who have done the work at the circulation desk and given much other assistance.

The Library has been open on Monday to Friday from 8:15 to 5:30, and from 6:30 to 10:00; on Saturday from 8:15 to 12:30 and on Sunday from 2:30 to 5:30, and 6:00 to 10:00. It was not open nights or Sundays when school was not in session.

Teaching Work

Classes in Library Methods, giving instruction in the use of reference books and the card catalog, have been taught by three members of the staff. This course is for one semester, gives one credit and is compulsory for Freshmen in the School of Arts and Sciences and elective for others. Enrollment in 1928-29 was 279 and in 1929-30 was 229, showing an increase for the biennium of 242.

Volumes Cataloged and Catalog and Shelf Cards Made

| | New Titles | Total Volumes | Catalog Cards | Shelf Cards |
|-----------------------------------|------------|---------------|---------------|-------------|
| 1928-29 | 1,604 | 5,323 | 5,229 | 2,020 |
| 1929-30 | 1,413 | 3,177 | 4,542 | 1,836 |
| Total biennium... | 3,017 | 8,500 | 9,771 | 3,856 |
| Increase over last biennium... | | 3,151 | 719 | 327 |

Decrease of figures for 1929-30 was due to pressure of other work.

Circulation of Books and Periodicals, Including "Reserved Books"

| | School Year | Summer School | Total |
|------------|-------------|---------------|--------|
| 1928-29 | 19,075 | 6,380 | 25,455 |
| 1929-30 | 20,245 | 7,832 | 28,077 |
| Total..... | 39,320 | 14,212 | 53,532 |

The total of 53,532 volumes for the biennium was 4,318 increase over the previous biennium.

Interlibrary Loans

During the first year of the biennium 61 volumes, mostly scientific periodicals, were requested on loan from the other libraries, and 79 in the second year, making a total of 140 volumes.

Volumes Added to the Library

| | By Purchase and by Binding Periodicals | By Gift | Total |
|-------------------------------------|---|---------|-------|
| 1928-29 | 2,386 | 566 | 2,952 |
| 1929-30 | 3,321 | 590 | 3,911 |
| Total..... | 5,707 | 1,156 | 6,863 |
| Increase over last biennium..... | 568 | 266 | 834 |

The largest purchase for a division was 403 volumes in new sets of scientific periodicals and the work of completing sets of periodicals was also carried on to a greater extent than formerly. Scattered official and unofficial publications of the University have been assembled and listed in the Library.

Gifts

The largest gift of the biennium came from the library of Mrs. Henrietta Goodridge through Dean T. H. Taliaferro. These were 108 books of a general and literary character.

President R. A. Pearson presented considerable pamphlet material. Dean H. J. Patterson gave a nearly complete set of experiment station bulletins of all the states, which is being bound for a duplicate set. Dr. Hayes Baker-Crothers secured from the Yale University Press 62 volumes on political science and history, and 63 volumes of a general nature were given from the University's Medical School in Baltimore.

Now in the Library

There are now about 32,000 volumes in the Library, including several thousand permanently housed in department offices. Exclusive of government documents, our subscriptions to periodicals, proceedings and transactions of learned societies and newspapers currently received number 455.

The New Building

It was necessary to have a new building that the Library might expand. That great need has been beautifully met and it is expected that the use of the Library will be greatly increased.

It will provide a splendid reading room seating 236 readers, where reference works may be consulted, periodicals and newspapers made available and where general reading and study may be pursued. It provides about three times the reading space in the old building.

There is a room with stack space adjoining which will especially provide for the needs of advanced students in agriculture and the other sciences, and two small unassigned seminar rooms designed to be used by advanced students in other departments.

The drastic changes in teaching methods from the old textbook idea to the new way of drafting many books to the service of the student, has revolutionized the university libraries. It has made them instead of places for book storage with comparatively little to offer in connection with the day's assignments, busy laboratories where students must come for outside reading from many sources. This broadening and enriching of the student's knowledge can come only through the broadening and enriching of the book collections in the libraries and through the ability of the library personnel to make available all that the libraries have to offer.

In the last few years, especially, very helpful increases have been made both in our book funds and in our Library staff. The continuance of this policy both as to books and staff will insure to our University a library which might well be called the center of its activities.

Respectfully submitted,

GRACE BARNES,
Librarian.

Registrar's Report—(College Park)

To the President of the University:

The following statistics show the enrollment of students, the degrees and certificates conferred, and the instructional staff at College Park for the years 1928-1929 and 1929-1930. The statement covering the enrollment of students includes the figures for 1930-1931, as of January 1, 1931. These figures are not complete since there will be additional registrations at the beginning of the second semester. The enrollment of resident students shows a steady increase. The enrollment of extension students has decreased this year due to the depression in the coal mining industry, from which the engineering extension students are drawn.

Additional clerical help and an increase in the supply budget are needed for the Office of the Registrar. The work of this department is constantly growing due to the increasing number of students and new duties which must be performed. Certain equipment is urgently needed, especially a calculating machine, to make more accessible the valuable information which is on file. However, with a limited budget which for this year will amount to about fifty cents per registered resident student, not taking into consideration the cost of handling a tremendous correspondence with prospective students, there is little that can be used for new equipment. Both the amount of clerical help and the supply budget fall far below the average for these items in other institutions of the same size.

Following are tabulations giving student registrations:

ENROLLMENT OF STUDENTS AT COLLEGE PARK

| | Men | 1928--29 Women | Total | Men | 1929-30 Women | Total | Men | *1930-31 Women | Total |
|---|-------|-------------------|-------|-------|------------------|-------|-------|-------------------|-------|
| <i>Resident:</i> | | | | | | | | | |
| College of Agriculture | 137 | 4 | 141 | 147 | 7 | 154 | 156 | 8 | 164 |
| College of Arts and Sciences | 489 | 99 | 588 | 525 | 100 | 625 | 517 | 103 | 620 |
| College of Education | 41 | 106 | 147 | 37 | 100 | 137 | 45 | 104 | 149 |
| College of Engineering | 260 | 1 | 261 | 274 | 1 | 275 | 315 | 1 | 316 |
| College of Home Economics | | 51 | 51 | | 76 | 76 | | 82 | 82 |
| Graduate School | 88 | 17 | 105 | 119 | 24 | 143 | 132 | 25 | 157 |
| Total Winter Resident | 1,015 | 278 | 1,293 | 1,102 | 308 | 1,410 | 1,165 | 323 | 1,488 |
| Summer School | 205 | 421 | 626 | 218 | 503 | 721 | 257 | 488 | 745 |
| Practice School | 24 | 32 | 56 | 43 | 34 | 77 | 28 | 49 | 77 |
| Total Resident Less Duplications | 1,180 | 701 | 1,881 | 1,278 | 817 | 2,095 | 1,342 | 812 | 2,154 |
| <i>Extension:</i> | | | | | | | | | |
| College of Education | 77 | 39 | 116 | 111 | 64 | 175 | 108 | 55 | 163 |
| College of Engineering | 171 | | 171 | 363 | | 363 | 192 | | 192 |
| Total Excluding Duplications | 1,428 | 740 | 2,168 | 1,752 | 881 | 2,633 | 1,642 | 867 | 2,509 |

*Figures for 1930-31 are not complete; second semester registrations not being included.

MEMBERS OF STAFF ENGAGED IN INSTRUCTION AT COLLEGE PARK 1928-1929

| | Agriculture | Arts and Sciences | Education | Engineering | Home Economics | Physical Education | Military | Summer School Specials | Extension Edu. | Engr. | Total |
|----------------------------|-------------|----------------------|-----------|-------------|-------------------|-----------------------|----------|------------------------------|-------------------|-------|-------|
| Professors | 16 | 13 | 3 | 4 | 2 | 1 | 1 | ..... | 1 | ..... | 41 |
| Associate Professors | 1 | 7 | 1 | ..... | 1 | ..... | ..... | ..... | ..... | ..... | 10 |
| Assistant Professors | 12 | 7 | 1 | 3 | 1 | ..... | 3 | ..... | ..... | ..... | 27 |
| Instructors | 2 | 11 | 3 | 1 | ..... | 1 | ..... | 20 | 5 | 1 | 44 |
| Assistants | 3 | 4 | 1 | 1 | ..... | ..... | ..... | ..... | ..... | ..... | 9 |
| Graduate Assistants | 2 | 8 | ..... | ..... | 1 | ..... | ..... | ..... | ..... | ..... | 11 |
| Fellows | 2 | 3 | ..... | ..... | 1 | ..... | ..... | ..... | ..... | ..... | 6 |
| Student Assistants ..... | ..... | 5 | ..... | ..... | ..... | 3 | ..... | ..... | ..... | ..... | 8 |
| Lecturers ..... | ..... | ..... | ..... | 1 | ..... | ..... | ..... | ..... | ..... | ..... | 1 |
| Experiment Station .. | 1 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 1 |
| | 39 | 58 | 9 | 10 | 6 | 5 | 4 | 20 | 6 | 1 | 158 |

| | 1929-1930 | | | | | | | | | | |
|----------------------------|-----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-----|
| Professors | 19 | 13 | 5 | 4 | 2 | 1 | 1 | ..... | 1 | ..... | 46 |
| Associate Professors | 2 | 8 | ..... | ..... | 1 | ..... | ..... | ..... | ..... | ..... | 11 |
| Assistant Professors | 11 | 7 | 1 | 4 | 1 | ..... | 3 | ..... | ..... | ..... | 27 |
| Instructors | 1 | 11 | 4 | 1 | 1 | 2 | ..... | 21 | 9 | 1 | 51 |
| Assistants | 1 | 3 | 1 | 1 | ..... | ..... | ..... | ..... | ..... | ..... | 6 |
| Graduate Assistants | 3 | 10 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 13 |
| Fellows | 1 | 2 | ..... | ..... | 1 | ..... | ..... | ..... | ..... | ..... | 4 |
| Student Assistants | 1 | 1 | ..... | ..... | ..... | 1 | ..... | ..... | ..... | ..... | 2 |
| Lecturers | 1 | ..... | ..... | 1 | ..... | ..... | ..... | ..... | ..... | ..... | 2 |
| Experiment Station .. | 4 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 4 |
| | 43 | 55 | 11 | 11 | 6 | 4 | 4 | 21 | 10 | 1 | 166 |

DEGREES AND CERTIFICATES CONFERRED AT COLLEGE PARK

| | 1928-29 | | | 1929-1930 | | | Total for Biennium | |
|---|---------|-------|-------|-----------|-------|-----------------|--------------------|-------|
| | Men | Women | Total | Men | Women | Total | Men | Women |
| HONORARY DEGREES: | | | | | | | | |
| Doctor of Divinity..... | ..... | ..... | ..... | 1 | ..... | 1 | 1 | ..... |
| Doctor of Science..... | ..... | ..... | ..... | ..... | 1 | 1 | ..... | 1 |
| Total Honorary Degrees..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| HONORARY CERTIFICATES OF MERIT..... | 3 | 1 | 4 | 1 | 1 | 2 | 1 | 1 |
| ADVANCED DEGREES: | | | | | | | | |
| <i>Graduate School</i> — | | | | | | | | |
| Doctor of Philosophy..... | 8 | ..... | 8 | 3 | ..... | 3 | 11 | ..... |
| Master of Arts..... | 9 | 5 | 14 | 1 | 7 | 8 | 10 | 12 |
| Master of Science..... | 16 | 3 | 19 | 29 | 2 | 31 | 45 | 5 |
| <i>College of Engineering</i> — | | | | | | | | |
| Civil Engineer..... | 1 | ..... | 1 | 2 | ..... | 2 | 3 | ..... |
| Electrical Engineer..... | 2 | ..... | 2 | 5 | ..... | 5 | 7 | ..... |
| Mechanical Engineer..... | 4 | ..... | 4 | 2 | ..... | 2 | 6 | ..... |
| Total Advanced Degrees..... | 40 | 8 | 48 | 42 | 9 | 51 | 82 | 17 |
| BACHELORS' DEGREES: | | | | | | | | |
| <i>College of Agriculture</i> — | | | | | | | | |
| Bachelor of Science..... | 17 | ..... | 17 | 23 | 1 | 24 | 40 | 1 |
| <i>College of Arts and Sciences</i> — | | | | | | | | |
| Bachelor of Arts..... | 42 | 17 | 59 | 46 | 15 | 61 | 88 | 32 |
| Bachelor of Science..... | 20 | 2 | 22 | 31 | 5 | 36 | 51 | 7 |
| <i>College of Education</i> — | | | | | | | | |
| Bachelor of Arts..... | 5 | 20 | 25 | 2 | 12 | 14 | 7 | 32 |
| Bachelor of Science..... | 8 | 10 | 18 | 3 | 10 | 13 | 11 | 20 |
| <i>College of Engineering</i> — | | | | | | | | |
| Bachelor of Science..... | 38 | ..... | 38 | 35 | ..... | 35 | 73 | ..... |
| <i>College of Home Economics</i> — | | | | | | | | |
| Bachelor of Science..... | ..... | 6 | 6 | ..... | 13 | 13 | ..... | 19 |
| Total Bachelors' Degrees..... | 130 | 55 | 185 | 140 | 56 | 196 | 270 | 111 |
| CERTIFICATES: | | | | | | | | |
| Two-Year Agriculture..... | 3 | ..... | 3 | 1 | ..... | 1 | 4 | ..... |
| Teachers' Diplomas..... | 17 | 42 | 59 | 12 | 34 | 46 | 29 | 76 |
| Certificates in Industrial Education..... | 7 | 1 | 8 | 12 | ..... | 12 | 19 | 1 |
| Total Certificates..... | 27 | 43 | 70 | 25 | 34 | 59 ¹ | 52 | 77 |

Respect fully submitted,

Registrar's Office—(Baltimore)

To the President of the University:

In compliance with your instructions, dated December 9, 1930, to furnish a departmental statement for the ensuing University biennial report, I am sending to you herewith a compilation (in duplicate) of the student enrollment (1928-29, 1929-30, first semester 1930-31), and the degrees and certificates conferred (1929 and 1930), Baltimore Schools, for the period designated.

STUDENT ENROLLMENT (BALTIMORE SCHOOLS)

| | 1928-29 | | 1929-30 | | 1930-31 | | |
|--------------------------|---------|-------|---------|-------|---------|-------|------------------|
| | Total | Men | Women | Total | Men | Women | (First Semester) |
| School of Dentistry..... | 384 | 382 | 2 | 349 | 346 | 3 | 407 |
| School of Law..... | 257 | 248 | 9 | 157 | 150 | 7 | 142 |
| School of Medicine..... | 413 | 400 | 13 | 419 | 406 | 13 | 406 |
| School of Nursing..... | 116 | ..... | 116 | 104 | ..... | 104 | 112 |
| School of Pharmacy..... | 373 | 350 | 23 | 359 | 338 | 21 | 322 |
| Total for Year..... | 1,543 | 1,380 | 163 | 1,388 | 1,240 | 148 | 1,276* |
| | | | | | | | 159 |

(*) One graduate student registered in the schools of Medicine and Pharmacy.

(†) Fourteen graduate students registered in the schools of Medicine and Pharmacy are registered also in the Graduate School, College Park.

W. M. HILLEGEIST,
Registrar.

DEGREES AND CERTIFICATES CONFERRED (Baltimore Schools)

| | 1929 | 1930 |
|---|------|-------|
| Total | Men | Women |
| <i>Honorary Degrees:</i> | | |
| Doctor of Laws..... | 1 | 1 |
| <i>School of Business Administration (1)—</i> | | |
| Bachelor of Science in Business..... | 1 | 2 |
| <i>School of Dentistry—</i> | | |
| Doctor of Dental Surgery..... | 103 | 34† |
| <i>School of Law—</i> | | |
| Bachelor of Laws..... | 89 | 29‡ |
| Certificate of Proficiency..... | 86 | 6§ |
| <i>School of Medicine—</i> | | |
| Doctor of Medicine..... | 100 | 87 |
| <i>School of Nursing—</i> | | |
| Graduate in Nursing..... | 31 | 20 |
| <i>School of Pharmacy—</i> | | |
| Bachelor of Science in Pharmacy..... | 7 | 22 |
| Graduate in Pharmacy..... | 84 | 105 |

*The School of Business Administration was discontinued June, 1926. The former students who received degrees in 1929 and 1930 completed the requirements for graduation at the Johns Hopkins University. By agreement, the degree of bachelor of science in business will not be awarded after 1930.

†The small 1930 dental graduating class is accounted for by the increase in the requirements for admission effective for the session 1926-27,—one year of college credit. The members of this class were admitted to the second year of the five-year curriculum (1926-27) with advanced credit of one year. The matriculants in 1926-27 who had high school education only were registered in the first year of the five-year dental course.

‡The 1930 law graduating class is small because it was the first class to register (1927-28) with two years of pre-professional credit.

§"Special law students are admitted (under the rules of the Association of American Law Schools) with less than two years of college credit. They may not exceed in any year ten per cent. of the average number of first-year students during the preceding two years, and they must show some special qualifications for the study of law. They are not candidates for the degree of bachelor of laws, but are awarded certificates of proficiency on satisfactory completion of the prescribed course of study."

Very respectfully,

W. M. HILLEGEIST,
Registrar.

Military Department

To the President of the University:

1. Appended hereto is a report covering the activities of the Military Department for the past biennium:

a. Basis of Instruction:

1. The work of this Department is based upon the provisions of Army Regulations 145-10 and conducted in accordance with a Program of Instruction which is prescribed annually by the War Department. The Program is revised from time to time to meet the changing training requirements of the various type units.

b. Type and Strength of Unit:

1. The University of Maryland maintains an Infantry Unit of the Senior Division of the Reserve Officers' Training Corps. The average strength of the Unit for the past two years has been approximately as follows:

| | |
|------------------|-----|
| Seniors | 40 |
| Juniors | 48 |
| Sophomores | 180 |
| Freshmen | 275 |

The Seniors and Juniors constitute the Advanced section, while the Basic section is comprised of Sophomores and Freshmen. The average of the Advanced section was somewhat less than during the preceding biennium, due to an abnormal number of withdrawals of students enrolled in the course, however, a recurrence of the conditions which caused same is deemed unlikely. A healthy increase has occurred in the basic section, and a continuance of this growth will require an increase in classroom space.

c. Eligibility:

1. All male students who are physically fit and over 14 years of age, and who will be citizens of the United States at maturity are eligible for admission to the R. O. T. C. course.

2. A student to be eligible for advanced course training must have been specially selected for same, and in addition, he must have satisfactorily completed the basic course. The selection is made by the President of the University upon the recommendation of the Professor of Military Science and Tactics, and with the approval of the Dean concerned. The War Department annually allots a number of vacancies in advance to the institution, and this allotment is the factor which governs the maximum number of students that can be selected. A student who successfully completes the advanced course is tendered a commission as Second Lieutenant in the Officers' Reserve Corps. The War Department has commissioned during the past two years a total of forty graduates who qualified through training received in this Department.

d. Facilities:

1. The classroom facilities and equipment needed for instruction are adequate and meet the *present* needs of the Department. An additional classroom will be required for Freshmen in the near future. The advanced course students are required to devote five (5) periods a week to instruction, while the basic course requirements are three (3) such periods.

2. Drill grounds for outdoor instruction are sufficient for the conduct of close order drills and ceremonies. The close proximity of the drill ground to the assembly area greatly facilitates instruction. The available terrain will permit of the solution of minor tactical problems.

e. Uniforms:

1. During the past year new and better type uniforms were supplied this University. These uniforms are made on the roll collar design and are appreciably more comfortable and sightly than those formerly issued. The material utilized is better than that in the old issue clothing. In addition to the improvements previously mentioned, the uniform includes a distinctive color design which is worked into the lapel of the coat. This color scheme is for organizations such as maintained here and facilitates identification of the student trainee.

f. Credits:

1. Military instruction at this institution is on a par with other university work, and students receive credits for work accomplished on the same basis.

2. The instruction given has been of a character and standard satisfactory to the University authorities and the War Department. The rating of Excellent has been accorded the Unit by the War Department during the biennium.

g. Regular Army Personnel:

1. The regular Army personnel on duty at the University of Maryland at the present time consists of one Major, Infantry, U. S. Army, Professor of Military Science and Tactics; one Captain, Infantry, U. S. Army; two First Lieutenants, Infantry, U. S. Army; one Warrant Officer, U. S. Army, and one Staff Sergeant. This personnel provides a commissioned officer as instructor for each group of students. Instruction other than classroom instruction, such as outdoor drills and exercises and target practice in the indoor gallery range, are under direct supervision of the Professor of Military Science and Tactics, and is conducted by officers especially qualified for the work.

2. No recommendations are deemed warranted at this time, though consideration should be given in the near future to the matter of an additional classroom to meet the needs of increased enrollment.

Respectfully submitted,

ALVAN C. GILLEM, JR.,
Major, Infantry, DOL., PMS&T.

Buildings and Grounds

To the President of the University:

One of the chief items of interest to the Department of Buildings and Grounds is the new buildings added to our quota. Two on the campus proper have been completed since our last report, viz., a Library and a Heating Plant. Both of these were built by contract labor from special legislative funds.

The heating plant, adequate for our needs, will eliminate individual units, giving us a more flexible and better controlled system.

Three buildings, none of which could be called large, were erected at the Live Stock Sanitary Plant, adjacent to the College Park Baltimore and Ohio Railroad station, viz., a main building, animal house, and a barn. The barn, a twin of one put up some years ago, was built by mechanics of this department.

In the line of extensive alterations, the old Chemistry Building, remodelled for a Home Economics Building, was completed and its occupancy has been a great satisfaction to that department.

Much was done in the way of repairs and improvements to the farm house on the horticultural farm, to make it suitable as a home for graduate students doing horticultural work. A new heating plant was installed, well drilled, water and sewer lines run, additional bath room facilities, electric wiring, house-hold conveniences, etc., provided.

The next building to receive attention will undoubtedly be the old Library, revamped as a Woman's building. We feel this will be ready none too soon, as the growing activities of the Home Economics department will cause demand to be made for the giving for class room purposes of the present girls' rest room located in the Home Economics building.

One of the principal building needs of this department is a Service building with equipped shops and storage space. Last year, to make more and better class room accommodations, our carpenter shop was moved to the old butcher shop in one of the Experiment Station frame buildings. This gave us less space with which to meet the growth of the institution.

The constantly increasing demand for laboratories, class rooms and offices, caused us to partition off a portion of one hall, give up rest room and store rooms and recondition them to meet requirements—Agricultural building and Morrill Hall.

Two major projects were accomplished—an installation of campus lights and a sewer serving the north side of our campus.

A stride was made toward securing fountains to supply electrically cooled water, thus relieving us of the old method of ice cooling. Four were purchased and installed in buildings especially needing relief.

Fire escapes were purchased and erected on the old Library, Engineering building, Home Economics, Gerneaux Hall and the Practice House.

Additional laboratory desks were built for Chemistry at a saving over outside purchase price.

A function of this department is to make things last as long as they will, appear as well as they can, and cost as little as possible consistent with good results.

To this end usual repairs were made, infirmary was reroofed, its walls and floors repaired, four tenant houses of Experiment Station wired, cafeteria of Dining Hall painted and made ready for opening, third floor drawing room of Engineering building painted and rewired for better lighting, painting here and there—Dairy, Chemistry, Agricultural building, et al; down-spouts, stairs, floors, etc., repaired and replaced.

The parking problem, with five-hundred automobiles on the campus, of necessity received consideration. A committee was appointed, the situation studied, parking areas laid out and put in at convenient locations, with very gratifying results.

The last two Summers, with water shortage, have been trying ones in campus maintenance and improvement.

Tree pruning and fertilizing has been done for the past two years until now the greater number of trees have received attention.

The slope west of Y Hut has been graded, seeded and set with forty-two oak trees. Considerable grading on the interior of the campus has been accomplished, seeding has been done where practical; where inadvisable, because of excessive washing, some of the outstanding places have been sodded. Area around Home Economics building has received treatment. Shrubbery has been planted.

One of our outstanding campus needs is additional walks to take our students off the concrete roads.

Respectfully submitted,

H. L. CRISP,
Supt., Bldgs. and Grounds.

Feed, Fertilizer and Lime Inspection Service

To the President of the University:

The following constitutes a condensed report of the activities of the Feed, Fertilizer and Lime Inspection Service for the biennium ending September 30, 1930.

INTRODUCTION

The Feed, Fertilizer and Lime Inspection Service has assigned to it for enforcement the Feed Stuff Act, the Fertilizer Act and the Agricultural Lime Act. This involves both physical and chemical examinations of all products sold, as well as a survey of the industries included in these Acts, to insure truthful labeling and legitimate marketing.

This organization is distinctly regulatory. Its research activities are limited to those made necessary by the demands of law and its service work is entirely incidental to the regulatory operations. Regulatory operations are rather difficult to present in the form of an official report. A completed regulatory project is practically unknown. Forms of violations apparently checked have a disconcerting habit of reappearing and calling for renewed activity. The submission of a statement including the number of samples collected, samples analyzed, prosecutions instigated, etc., illustrate certain features of the inspection work, but do not disclose in its entirety the actual progress made in improving the quality and honesty of the feed, fertilizer and lime supply to residents of Maryland. Many visits are made by members of this organization to individual plants, which very often result in the elimination of bad factory practice and an improvement in the quality of material produced. Our Annual Report must therefore be largely restricted to matters which are typical of our work and indicative of the trend in the industries subject to control.

Past years' enforcement activities have clearly demonstrated that an indiscriminate sampling of feed, fertilizer and lime products, while it may by the law of averages reveal numerous violations, leaves much to be desired in the way of public protection. It has also been noted that if legal development against every definite violation encountered were attempted, without regard to its significance from animal health or economic viewpoint, we would be promptly involved in a mass of more or less trivial actions, while serious violations from consumers' viewpoint would proceed unchecked. On the other hand,

it has been demonstrated that it would be entirely possible, as well as profitable, for us to devote all of our time and funds to the supervision of one small part of each industry; for example, in our feed work, the supervision of production and sale of fish meals and meat by-product feeds. Obviously, neither course of enforcement procedure is in the best interests of the public.

The method of enforcement developed, therefore, is known as the project plan. It is not a new policy, nor one that is original in Maryland. It has been used for some years by the United States Department of Agriculture in connection with the enforcement of the Food, Drug and Insecticide Act. It was found that a co-operative policy with the industries regulated, using prosecution as a necessary adjunct where educational measures failed, offered the most effective means of affording maximum protection to the consumer. We therefore confine our activities in those directions where past experience has indicated that the greatest amount of disturbance has been found. There are certain products which by reason of their peculiar adaptability for adulteration or misbranding, or their high market value, offer particularly fertile fields for sophistication. Taking into consideration our limited facilities and the vast scope of the industries we regulate, it is necessary to keep under constant surveillance these materials and the products that are marketed by that small per cent of manufacturers who have neither the propriety nor the wisdom to produce a commodity which will meet the requirements of the Law. The products of the reputable manufacturers are inspected occasionally during the year to ascertain if they are being kept up to the standard of former years and no change in production or policies is brought about by a change in management or from any other causes. The products of the other manufacturers, which are but a small per cent of the total, are placed under intensive inspection. The products of such manufacturers are sampled as often as possible and, when needed, corrective methods may be supplied. This intensive surveillance tends to bring about an improvement of such concerns and reacts for the betterment of the industry as a whole.

CONDENSED STATEMENT OF CONTROL ACTIVITIES

In the interests of clarity and convenience, the report is presented under the general sub-heading of the industries controlled.

| | Feeds | | |
|---|-------------|-------------|-------------|
| | 1929 | 1930 | Total |
| Samples Collected by Inspectors..... | 1869 | 2260 | 4129 |
| Samples Forwarded by Maryland Residents | 242 | 240 | 482 |
| Licenses Issued (Brands Licensed)..... | 1907 | 1998 | 3905 |
| Prosecutions Instigated (Federal)..... | 24 | 30 | 54 |
| Prosecutions Instigated (State)..... | 8 | 6 | 14 |
| Receipts in License Fees | \$32,000.00 | \$33,130.00 | \$55,130.00 |

Fertilizers

| | | | |
|---|-------------|-------------|-------------|
| Samples Collected by Inspectors..... | 1279 | 1283 | 2562 |
| Samples Forwarded by Maryland Residents | 108 | 91 | 199 |
| Licenses Issued (Brands Licensed) | 957 | 936 | 1893 |
| Prosecutions Instigated | 2 | 2 | 4 |
| Receipts from Fees and Tonnage Tax..... | \$20,880.01 | \$20,572.96 | \$41,452.97 |

Limes

| | | | |
|---|-------------|-------------|-------------|
| Samples Collected by Inspectors..... | 108 | 116 | 224 |
| Samples Forwarded by Maryland Residents | 44 | 35 | 79 |
| Licenses Issued (Brands Licensed)..... | 84 | 88 | 172 |
| Receipts in License Fees..... | \$ 1,290.00 | \$ 1,380.00 | \$ 2,670.00 |

In the course of inspection work covered by the biennium ending September 30, 1930, 6,945 samples of feed, fertilizer and lime were collected by our inspectors and examined by our chemists. This total was augmented by 760 samples forwarded by residents of the State, upon which the department rendered a gratuitous report. Every effort is made to arrange our official duties that reports of correspondents' samples are returned not later than ten days after the reception of the sample at College Park. This constitutes a useful public service from which the University is the recipient of much favorable comment. However, it is borne in mind at all times that we cannot perform this type of work in such volume or with such frequency as to exercise a systematic control over purchases. This clearly encroaches upon the territory of the commercial laboratory.

In addition to the routine chemical analyses, all samples of feed were subjected to microscopical examination for the purpose of substantiating manufacturers' declaration of ingredients. A check-up for ingredients should also be conducted on all official samples of fertilizer. However, due to lack of personnel, we have not been able to render this service to users of plant food material.

Recent interpretations of our Feed Law by the Office of the Attorney General has placed within our jurisdiction, dog feeds, rabbit feeds, fox feeds and mixtures of a mineral nature. This addition to our duties has placed an added burden on an already overworked organization. The examination of cod liver oils for vitamin potency should be undertaken but as yet no funds or personnel have been provided to carry out this important piece of work. In addition to these necessary activities a study should be made of those new feeding materials which are constantly appearing upon our market.

FEDERAL CO-OPERATION

State Feed Control Officials may secure authorization from the Secretary of Agriculture, operating under the Federal Food and Drug Act, to collect and examine interstate shipments of feeding materials.

If deficiencies are noted in such shipments, the submission of this evidence to the nearest Federal Office will result in immediate action. During the past two years, 54 samples of feed, shipped into Maryland by outside manufacturers, which appeared to violate, in certain respects, not only our State Law but the Federal Statute as well, were submitted to the Federal Office in Baltimore for their consideration. This co-operation makes it possible to place the responsibility for misbranded or adulterated products upon the out-of-state shipper, where it rightfully belongs. It also affords a medium whereby our local dealers are protected against prosecutions for sales made in good faith and in entire innocence of any intentional illegality. Another point in favor of Federal co-operation is the general salutary effect of such cases on the local trade. Adverse publicity travels rapidly and local manufacturers, knowing of Federal action through State co-operation, hesitate before violating the State Statute, even though they would not be held for Federal prosecution. Without such aid, the State Control Official cannot adequately protect the buyers of feed within his territory and insure that justice be done to all parties involved.

It was found necessary on eighteen occasions during the past two years to instigate legal action against certain Maryland producers. This was made necessary because constructive suggestions as advanced by this organization were not given due consideration.

By far the greatest source of annoyance to those charged with enforcing these three State laws is persistence in unlicensed selling. During the past two years our three inspectors reported 814 consignments of unlicensed products. Such infractions are a matter of inconvenience and loss to dealers handling the products. Continual withdrawal from sale, pending payment of license fees, works a decided hardship on the distributor. It is not anticipated that a condition of one hundred per cent compliance with the registration clause of the various laws will be reached. Manufacturers are prone to register only after notification from us that they have been detected in violation. This evasion of the registration requirements of the several laws makes it necessary to exercise a very careful inspection at all times.

PUBLICATIONS

This organization is required by law to publish in bulletin form the record of inspection obtained on the various commodities analyzed. The publication of this statistical data is also supplemented with such comment and discussion as is deemed helpful to those particularly interested in the production, as well as the use of feed, fertilizer and lime. We have found that certain of these publications are being used to supplement textbooks in agricultural high schools. They are

also being used as references by agricultural experiment stations. Their popularity is well evidenced by the requests that are received for copies and by the favorable comment noted in newspapers, agricultural journals and the farm press.

CONCLUSION

The officials of the Feed, Fertilizer and Lime Inspection Service have continued to exercise a systematic and effective supervision of the operations of manufacturers and of the materials produced. Although the work now is not so sensational as previously, it is of no less concern to the economic welfare of the State. That constant vigilance is still necessary is evidenced by the fact that we have found hundreds of products not licensed, as well as 82 shipments of adulterated or misbranded materials. Adulterations today consist principally of the substitution of a cheap substance for some declared ingredient that costs decidedly more. Naturally these conditions require prompt attention to insure the protection contemplated, particularly by the Feed Law.

Considering the enormous increase in the volume of manufactured products coming within the jurisdiction of these three laws, the proportion found adulterated is very small. It is necessary for control officials to be constantly on the alert to restrain that small portion of manufacturers who will still take the chance to produce a dishonest product, or to jeopardize the health of animals by adulterating products, whether the adulteration be the result of carelessness or deliberate intent.

Respectfully submitted,

LESLIE E. BOPST,
Associate State Chemist.

State Department of Forestry

To the President of the University:

The work of the Forestry Department, which was created by the forest laws of 1906, may be classed under three heads, administration, cooperative and investigative work, and education.

ADMINISTRATION

Forest Protection:

The State is divided into three forest districts, each in charge of a technically trained district forester, whose headquarters are, District 1—Cumberland, District 2—Laurel, District 3—Salisbury, and five district forest wardens. The entire work of forest protection is in charge of an assistant forester located in the Baltimore office. There are at present 14 lookout towers. Each tower has telephone connections. There are also a number of fire patrolmen, known locally as smokechasers, who travel about in response to calls from the forest fire towers.

At present there are about 600 forest fire wardens scattered throughout the State, where the fire danger is greatest. These are non-salaried employees, who are paid only for the time actually spent in fighting forest fires.

One new lookout tower has been completed in this biennium at Stoney Forest, in Harford County. Several new district forest wardens who assist the district foresters during the fire season have been added.

Closer cooperation with the volunteer fire companies has been maintained during the last two years.

1930 was a most severe fire year. The unprecedented dry weather caused an outburst of forest fire which practically swamped the resources of the Department, and added an extra financial burden on the State and various counties. It was found necessary to ask for a special loan in order to meet the expenses. The serious fire hazard was felt throughout the eastern seaboard and the Department feels that it came through the season very creditably.

In 1929 there were a total of 586 fires recorded, which burned over 17,926 acres, and did \$75,860 damage. The cost of extinguishing these fires amounted to \$7,150.

In 1930 there were 2,313 fires reported, with a total damage of 102,310 acres, and the cost of the damage was \$661,811.33. The cost of extinguishing these fires during 1930 was \$62,959.70.

Roadside Trees:

The roadside tree work is almost self-sustaining. Through this work much is being done to improve the appearance of roadsides. The law provides that trees on the roadsides may not be trimmed or removed by public service corporations or others, except under supervision of the State Forestry Department and in this way many valuable and beautiful trees have been preserved.

During the fall of 1929 the Town of Elkton disputed the jurisdiction of the State over trees in Elkton. The State filed a test case in court and the law was upheld.

Roadside planting has been carried on during the last two years, trees being furnished by the State Department of Forestry under the free tree offer. Approximately 2,000 trees were given for plantings of not less than one-quarter mile, on both sides of the highway, where good demonstration areas were decided upon.

State Forests:

The program of the Forestry Department for acquisition of land for state forests was brought before the people of the State through the Legislature of 1929, which resulted in the appropriation of \$50,000 for this purpose. Approximately 11,155 acres were bought with this amount in Garrett County and 3,800 acres in southern Maryland. These areas, added to the existing forests, make a total of 25,365 acres, and there are several other tracts amounting to nearly 10,000 acres, under option.

The land now in state forests and that under option is primarily suited for timber growing, but there are locations in them which will be used for recreation.

Fort Frederick is being used as a demonstration of forest planting, as well as for recreation and a historic shrine.

The Seth Demonstration tract near Easton is purely for demonstration purposes.

Near Baltimore the Patapsco State Forest is used by thousands of people annually for short excursions, as well as for camping.

COOPERATIVE AND INVESTIGATIVE WORK

Cooperative Work:

Cooperation with woodland owners during the past two years has resulted in making 92 examinations. In 24 cases estimates or markings were recommended and asked for. The examinations are made by the technical staff of the Department and no charge is made to the landowner for this service. For the markings and estimates made as a result of these examinations a nominal charge was made.

Investigative Work:

Further investigative work was carried on in studying some of the important tree species of the State, especially spruce pine. Other investigations covering forest resources and forest uses were carried on also.

A survey of non-utilized wood was carried on with the Department of Commerce of the United States and the Baltimore Association of Commerce, similar to the ones recently completed in Virginia and North Carolina. All wood-working establishments were circularized as to species and amount of wood used, and the waste resulting. A publication on the findings of this survey is being published by the Department of Commerce.

Service was rendered corporations and individuals in the identification of trees and woods, and advice as to the treatment of trees affected by insects and tree diseases was given, a number of corporations and individuals having availed themselves of these services.

The Department has felt that through educational work it could bring about the best results for forestry in the State. In order to bring about better forestry methods, inasmuch as most of the woodland is owned privately, educational work should be stressed.

One of the main channels open of educational work is the popular lectures and addresses which are given before civic organizations, schools and clubs. During the past biennium 252 lectures were given, the greater proportion of them being illustrated.

Two booklets and two annual reports were published. The booklets were on tree planting and management of young stands. The results of investigations are also published by the Department when the studies are completed.

Exhibits:

The Department has a number of exhibits on various forestry subjects, some small exhibits which are loaned to schools and clubs, and larger ones for fairs and the like. A large exhibit showing roadside planting was gotten up and shown at the annual Flower Show in Baltimore.

Demonstrations:

In cooperation with the Extension Service of the University of Maryland, the Department has conducted a number of demonstrations in planting, timber markings, measuring, and improvement cuttings in various parts of the State. This demonstration work, in conjunction with lectures, has resulted in many forest owners putting their woodlands under correct forestry practice.

Very respectfully,

FRED W. BESLEY,
State Forester.

Maryland Geological Survey

To the President of the University:

The Maryland Geological Survey has continued its work of mapping the geological formations of the State in the counties not yet covered; it has cooperated with the U. S. Bureau of Mines in the collection and compilation of the statistics of mineral production of the State; with the State Experiment Station in surveying the agricultural soils; with the Hydrographic Branch of the U. S. Geological Survey in the gaging of a few streams (with funds supplied by interested towns or private companies); and the revision and republication of topographic maps and other activities as outlined in previous reports.

The State Geologist was commissioned by the Governor to represent Maryland in determining and marking the boundary line between Maryland and Virginia along the Potomac River from Smith's Point to Washington. The final report of this work is now in press and will probably appear before the end of the present year.

During the biennium the State Geologist represented the State at the 15th International Geological Congress held in South Africa. He has also continued to serve as a member of the Executive Committee of the American Association of State Geologists; is Chairman of the Advisory Council of the U. S. Board of Surveys and Maps, as well as a member of the Maryland Development Bureau.

A summary of the publications of the Survey includes reissues with revision of the topographic maps of St. Mary's, Kent, Dorchester, Cecil, Harford and Washington Counties, the last three being in press. The publication of soil maps of St. Mary's and Worcester Counties; geological map of Carroll County. The report on the Physical Features of Baltimore County has been issued and has received many commendations on its superiority over county reports usually issued by State Surveys.

Work in progress includes the geological survey of Charles County which has been completed and the manuscript on the geology of the region is in hand. The geological map of Frederick County is practically completed, while geological surveys of Howard and Montgomery Counties are probably over 35 per cent completed. The manuscript for a new and enlarged geological map of the State is well advanced and it is planned to issue this during the coming year in order that it may be available at the meeting of the 16th International Congress in Washington in 1932.

While it is easy to enumerate specific projects completed or in progress, such statements do not represent the major portion of the Survey's work, which is as a bureau of information and advice for the various bureaus of the State Government; operators in the mineral industries; and for people with undeveloped mineral properties or active in various aspects of geology. The past six months have been particularly occupied in giving advice regarding the location of supplies of underground waters for various municipalities and villages throughout the State. The problem has arisen from the phenomenal drought of the year and the resulting contamination of preexisting supplies of water or in a few instances from the practical exhaustion of water from sources hitherto amply sufficient for the use of the communities affected.

It is almost inevitable that these localities will soon be obliged to store surface waters for their use. This will involve a large investment of public moneys which should not be undertaken until we have a more thorough knowledge of the yield of various streams. Such knowledge can only be secured by widespread systematic gaging of the streams over a term of years and everything should be done to secure funds for the accomplishment of such gaging work. Three to five thousand dollars a year spent in cooperation with and under the direction of the Hydrographic Branch of the U. S. Geological Survey should meet our needs. As it is, no State bureau has the information necessary for supplying adequate answers to any State, municipal, or private agencies desiring such information before the investment of funds.

Respectfully submitted,

EDWARD B. MATHEWS,
State Geologist.

The Extension Service

To the President of the University:

In surveying the activities of the Extension Service for the purpose of a biennial report, it is gratifying to note substantial progress in all phases of the work. Demands for work along many lines have increased more rapidly than have facilities and personnel for meeting them and particularly during the trying conditions of 1930 have farm people looked to the Extension Service for aid in meeting the difficult problems thrust upon them by the drought.

The year 1929 was not entirely favorable for the production of some of the important crops in Maryland, but, on the whole it can be recorded as a reasonably satisfactory season. There was a substantial gain in income from truck crops, tobacco gave fairly satisfactory returns, the same may be said of fruit, while the corn, wheat and hay crops, which occupy a large percentage of the land in farms, had a lower cash value, due to a combination of short yields and low prices. With the exception of wheat, however, the real value obtained from these crops is in the form of feed and is reflected in the income from dairying, livestock and poultry, each of which showed an increase and helped to effect the low value of the crops, when estimated on a cash basis.

The season of 1930 proved to be the most discouraging on record for the farming industry in Maryland. Entering the year with a considerable deficiency of moisture, there was not a month in which the precipitation was not decidedly below normal. While a few sections were benefited somewhat by local rains, the State as a whole received only about one-half its usual rainfall and during the last half of the year there was little more than one-fourth the normal amount.

With the exception of the small-grain crops, which were near enough maturity when the drought became severe to enable them to make good yields, every crop and every phase of agriculture was dealt a serious blow. Pastures were almost a failure and hay crops produced very little rough feed, with the result that providing feed for livestock, dairy animals and poultry became an acute problem for the farmers of the State. Canning crops, in spite of a material increase in acreage, gave considerably less than half the usual yield. Truck crops were likewise reduced in quantity produced and the quality was much below standard. The fruit industry suffered in similar measure and, in addition, was forced to meet some unusual

problems, such as the use of irrigation in some instances where it was feasible and the problem of ridding fruit of spray residue because of the lack of rainfall to accomplish that result.

Not only were the farmers confronted with decreased production such as they had never before experienced, and with products of poor quality because of insufficient moisture to make normal growth, but prices for nearly all kinds of farm produce were extremely low.

Notwithstanding the severe blow that Maryland agriculture has suffered by reason of the drought, and the fact that its effect cannot fail to be felt for some years in the future, farmers are facing the situation courageously and are utilizing all the assistance available in solving their unusual problems.

Progress of Extension Work

The field force of the Extension Service has been materially improved and extended during the biennium. This applies to both County Agents and Home Demonstration Agents. As in former years, a County Agent has been maintained in each county in the State, and Assistant Agents have been in service in five of the counties for all or a part of the period. Arrangements were completed for installing Home Demonstration Agents in the three counties which have not had such service in former years. Maryland is outstanding in its ability to serve the people in all parts of the State, both men and women, as few, if any, other States offer the service of both a County Agent and a Home Demonstration Agent in each county and also maintain a number of Assistant Agents.

The corps of specialists has been somewhat enlarged in response to the demand for work along certain lines and in order to meet specific problems and situations as they have developed.

When Extension work was inaugurated in Maryland, the policy was adopted of supporting it wholly from public funds. The Service has been given splendid cooperation in carrying out this policy by all counties of the State, each of them making a reasonable appropriation for support of the work. Every plan for improving the economic situation of the farmer or homemaker has received sympathetic support of people throughout the State.

Work among the boys and girls has shown splendid progress. With the funds made available by the Capper-Ketcham Act, and the employment of Assistant Agents in a number of counties, it was possible to increase the emphasis placed upon this work. Larger numbers of boys and girls were enrolled and the projects carried out by them have become more varied and more extensive. Training the farm youth and developing in them a love and a desire for farm life is undoubtedly one of the most valuable services that can be rendered, not only to agriculture, but to the State.

Work among the colored population of Maryland has been continued and extended by the addition of another Local Agent for work with the women of the colored race on the Eastern Shore.

Field Crops

An outstanding feature of the work in 1929 was a project to show the possibilities of increased returns from pastures and meadows. These result demonstrations, together with other methods of emphasizing the value of increasing the carrying capacity of the large acreage of grass lands in the State, have aroused much interest. The primary purpose is to encourage the production of high-grade, home-grown feeds. Other efforts in this same line include alfalfa campaigns and work designed to increase the acreage of other legumes, such as soybeans and cowpeas.

Work along these lines was started on an increased scale in 1930, but progress was impossible because of the almost complete failure of pastures due to the dry season. It was necessary to concentrate attention upon the production of emergency forage crops.

Although seed corn selection has not been a major project the last two years, it has been given considerable attention. In 1929, the quality of the corn was so good that there was little difficulty in obtaining an ample supply of satisfactory seed. The situation was serious in 1930, but with special effort it is believed that sufficient supply of fairly good seed corn has been provided to plant the crop next spring. Each year a creditable display has been made at the International Grain and Hay Show at Chicago, and Maryland corn has received its share of awards.

A close check has been kept upon the amount of smut in wheat and barley, and many fields have been inspected each year, but conditions have been such at threshing time that the operation eliminated much of the smut and it has not been necessary to conduct extensive demonstrations of the methods for treating seed in order to keep damage by the disease at a low point.

Livestock Development

Several important developments have occurred in the field of animal husbandry during this biennium. One of the most outstanding is the Baltimore Livestock Show, which was started at the Union Stock Yards in Baltimore. In planning and launching this event, members of the Extension Service gave whole-hearted cooperation and substantial assistance. The first show was held in October, 1929, and the second in October, 1930. To give some idea of the size of the event, it may be stated that livestock were exhibited from Kansas, Texas, Missouri, Minnesota, Iowa, Illinois, Ohio, Pennsylvania, New York, Virginia, Tennessee, North Carolina, and Maryland. Total sales

in 1929 were approximately \$285,000, and, in 1930, although livestock prices had dropped considerably below levels obtained the previous year, the total sale for all livestock in the show amounted to \$217,227. This livestock show will undoubtedly become of great importance, not only to Maryland livestock interests, but to those in the whole eastern half of the United States.

During the last two years the Maryland Litter Contest has been growing and improving. It is expected that this development will continue until this State is producing many more hogs in the next few years.

Another outstanding development is the increasing number of purebred beef cattle herds and sheep flocks within the State. At least 25 herds of purebred beef cattle are to be found on Maryland farms today, and there are more than 100 flocks of purebred sheep. As a result of this development, many purebred breeding animals, including hogs, sheep, horses and cattle have found markets over a wide territory. Maryland is favorably located for export trade in purebred livestock and the future may see considerable tendency in this direction.

The severe drought of the past summer has curtailed the livestock industry to a great extent. Only about 35% of the normal quota of feeder cattle will be fed this year and farmers are forced to cut their operations to a point where they will not have to buy too much feed. In spite of these things, the Maryland livestock industry is perhaps on a more substantial basis than it has been for a number of years.

Progress in Dairying

Extension work in the dairy field has been focused upon improving the quality of milk produced and lowering production costs through increased use of home-grown feeds, elimination of unprofitable cows, and the introduction of proven sires. Calf Club Work among 4-H Club members has made remarkable progress, both in the numbers of boys and girls enrolled and in their achievements. As in former years, the Timonium State Fair has given valuable support in this work. In both 1929 and 1930, judging and demonstration teams and also Calf Club herds of dairy cattle were sent to the National Dairy Exposition at St. Louis. A team of Maryland club boys won the National championship in judging dairy cattle in 1930.

Special emphasis has been placed upon the construction and improvement of dairy buildings, with the result that a large number of barns have been built or remodelled and many dairy houses and cooling tanks have been built. A silo campaign was conducted and almost 200 silos were built in 1929. The record for 1930 will show nearly as many.

Outstanding progress has been made in Advanced Registry testing during the two years. The number of cows on test has doubled in the period and 35% more breeders are utilizing the service.

A special effort has been made to interest purebred breeders throughout the State in the improvement of their respective breeds, with a view to developing the purebred dairy cattle industry of Maryland.

Herd Improvement Associations have shown an increase in the number of herds on test, and the average production of milk and butterfat per cow has also increased.

Poultry Development

The two-year period has witnessed outstanding progress in Extension work among poultry raisers. A farm flock record project was started in 1930 and resulted in about 200 poultry keepers making complete records of production on special calendars furnished by the Extension Service. This number has been about doubled for the coming year.

A campaign stressing the essentials for growing healthy chicks was conducted in 1929 and proved exceptionally effective in lessening the loss of young chicks. This work has been continued during 1930.

Certification of poultry as a means of improving breeding flocks has been greatly expanded. In cooperation with the Maryland State Poultry Association, the Service has assisted in the certification of birds and the number of poultrymen taking advantage of this service has increased very rapidly. In 1929, a total of 17,000 birds were examined and 12,500 met the requirements for certification; 23,000 were examined in 1930 and 17,500 were banded as certified. In cooperation with the State Livestock Sanitary Laboratory, arrangements were made for conducting blood tests for Bacillary White Diarrhea and breeders are proving ready to take advantage of that service.

Among the branches of the poultry industry which have shown outstanding progress and have made heavy demands upon the specialists and agents of the Extension Service is turkey production. Tours to leading poultry farms, some of which produce more than 2,000 birds a year, have been conducted and assistance has also been given in properly preparing turkeys for market.

Horticultural Work

Improvement in the quality of fruit and lowered costs of production have formed the basis for efforts towards improvement in the fruit industry. The work has included emphasis upon the use of nitrogen fertilizers, the increase of organic matter in orchard soils by use of cover crops, and the improvement of size and color of fruit by thinning

fruit and by heavier pruning of older trees. Many demonstrations of the value of these methods have been conducted each year.

Orchardists were confronted with many unusual problems in 1930, by reason of the drought, and heavy demands were made upon the Service for assistance in solving them. Growers who were so located that they could use irrigation resorted to that practice with favorable results. Lack of sufficient rainfall to eliminate spray residue furnished a special problem in some cases.

Our specialists have assisted in the work of the Horticultural Society and have served as judges at many fruit shows.

Landscape Gardening

Interest in the improvement of home grounds has increased very rapidly in the two years and it has been difficult to meet the demand for work in that line with the limited force available. People are giving greater attention to the aesthetic value of the home than ever before, and the work is extending to public school and church grounds and to civic centers in the small towns. The number of requests for plans for planting home ground and around public buildings has increased greatly and is beyond our facilities for handling properly.

Homemakers' Clubs in several counties have made landscape gardening one of their projects and are showing excellent results.

Vegetable Gardening

Special help has been given to vegetable growers in the control of insect pests and plant diseases, in the selection of varieties, and in cultural methods, but work in this line is not commensurate with the importance of the industry. It is an important phase of Maryland agriculture and in some counties truck crops are the leading crops of the farmers. It is hoped that we may be able to allocate a full-time specialist to work with agents and farmers on their truck crop problems.

Forestry Work

Five major projects have been featured in the forestry extension work during the two years. They are: (a) the reforestation of idle or abandoned farm land, (b) woodland thinnings and improvement cuttings in young or immature woodlands, (c) marketing mature timber, (d) windbreak planting, and (e) maple syrup and sugar production and marketing. Public interest in these efforts has been greater than during any previous biennium, and although the effects of the severe drought of 1930 are especially noticeable in the survival of trees in forest and windbreak plantings, the vital importance of this work is more generally recognized and it should continue to develop in spite of this year's losses.

A total of 49 forest planting demonstrations and 9 windbreak planting demonstrations were held in 20 counties, involving the planting of 239,000 trees. There were 26 woodland thinning demonstrations held in 14 counties, with 270 persons in attendance. An association of maple producers was organized in Garrett County, which sponsored Federal-State inspection of more than 2,000 gallons of maple syrup, and sold this syrup by grades established by the State Board of Agriculture. A four-year Four-H Forestry Club Project has been organized and adopted by the several counties.

Work has been conducted by lectures, by tours to demonstrations, by publications, and through volunteer Forestry Councils organized in six of the counties. There has been closest cooperation with the State Forestry Department staff.

Progress in Marketing

The past two years have witnessed greater interest in matters pertaining to the marketing of farm products than in any similar period of former years, and demands for work upon the many phases of that big problem have been much greater than could be satisfied with present facilities. Passage of the Federal Marketing Act early in 1929 and appointment of the Federal Farm Board about the middle of that year gave great stimulus to marketing activities. It has been necessary for practically all forces of the Extension Service to devote strenuous efforts to this important phase of agriculture.

One of the outstanding features of this line of work was the Farmers' Marketing Conference which was held in August, 1930, with the cooperation of the Experiment Station Staff and faculty of the University. It was the first event of its kind held in Maryland and four full days were devoted to study and discussion of practical problems affecting the marketing of products grown on the farms of the State.

Calls upon the Service for information and advice regarding co-operative organizations have greatly increased and assistance has been given to some of the organizations already in the field in making such adjustments as to enable them to conform to the general marketing program of the Farm Board.

Two marketing tours were arranged with the cooperation of railroads and groups of leading farmers were given an opportunity to see just how their products are handled in the large terminal markets. Particular attention was given to the character of containers used and the standardization and grading of products.

Work in shipping point inspection of farm products has shown increased demand. In 1929, a total of 2,781 cars were inspected, including apples, peaches, pears, strawberries, Irish potatoes, sweet potatoes, tomatoes, cantaloupes, cucumbers, and mixed vegetables. The volume

of products was greatly reduced by the drought in 1930, but peppers and maple syrup were added to the list of products for which inspection service was furnished.

Certification of Maryland-grown seed has been continued and has included Irish potatoes, tomatoes, and wheat. In 1929, there were 580 acres of potatoes inspected and more than 40,000 bushels of seed was certified. The extremely dry season of 1930 seriously curtailed this work.

In order to assist producers in distributing their products more intelligently, information regarding market receipts and prices has been issued in four different types of market reports. These include a daily market news service, a daily city market report, and monthly market news letters.

Washington Market Problem—This problem involves the welfare of about 500 producers in Maryland, who have been practically without facilities for selling their produce to consumers in Washington. Because of its importance to farmers of the State, the Extension Service has made intense efforts to effect a satisfactory solution. There have been many factors involved and the issue is not yet closed. It is hoped that proper authorities can be made to realize the desirability of a suitable market at a convenient and practical point in the city.

Home Demonstration Work

Excellent progress has been made in Home Demonstration Work during the last two years. It is evident from the interest shown and results achieved that this work has become thoroughly established with the people of the State. It is no longer difficult to secure co-operation from the leaders of a county in helping with programs of work, and local project demonstrators are giving effective assistance to home demonstration agents in carrying out the projects included in the programs. Subject matter written by the specialists has been the means of helping the demonstrators and inspiring them to pass information on to other women. By this method and through organized groups, Extension workers have been able to reach more people.

Clothing schools have met with popular favor and, in addition to information for the benefit of adults in solving their clothing problems, special attention has been given to aiding young mothers in providing suitable clothes for their children. Foods and nutrition work has had a place in all county programs and a large percentage of farm families have improved their daily diet by following outlines of balanced meals and improved methods of preparation. The problem of meeting the present economic situation from the standpoint of feeding the family for good nutrition with the money available has been given much attention during the past year.

Farm families are thinking in terms of more convenience and more attractive home furnishings and a home management project to meet this desire has been carried throughout the period. This includes installation of water systems, lights, change in house plans and general home conveniences. During the past year, a home flower garden project was given to the women in fifteen counties who were interested in improving their home grounds. Work in this project was closely supervised by the home demonstration agent and the Landscape Gardening Specialist.

Achievement days have continued to prove their worth as a means of checking results and the number of such events has increased. In 1930, eighty-nine achievement days were held in nineteen counties.

Marketing Tour—In view of the important part which rural women have, both in the marketing of farm products and in the buying of supplies for the farm and home, arrangements were made in co-operation with a railroad company for a Rural Women's Marketing Tour. This provided an opportunity for a group of Maryland farm women to visit and study some of the large terminal markets and merchandise marts of New York City.

Rural Women's Short Course—The annual Rural Women's Short Course, held each June under the auspices of the Extension Service, has grown each year, both in interest and in the number of women who take advantage of the opportunities it offers them. More than 600 women, representing every county in the State, attended the course in 1930. The program is planned to give help and inspiration to homemakers and is diversified to meet the needs of all women. County leaders who attend this course return to their counties and through demonstrations and talks give help to others, as well as inspire them to attend the Short Course, which is looked upon as an opportunity for advancement in adult education for rural women.

Boys' and Girls' 4-H Club Work

Work with the farm boys and girls has shown distinct progress during the biennium. Passage of the Capper-Ketcham Act made possible the appointment of additional assistant county agents and home demonstration agents and greater emphasis could be placed upon this very important line of work than could be given to it in former years. An increase of 3,514 club members from 1927 to 1930 is an indication of the growth that has come with additional workers and of the readiness of farm boys and girls to respond to work of this kind when the opportunity is offered them.

Approximately 7,000 rural boys and girls have been enrolled in clubs for each of the two years and have carried on practical demonstrations on the farms and in the homes. There has been an increase of a little more than 50% in enrollment, including both white and

colored club members, since the beginning of this two-year period. While the fundamental purpose and aim of the work in educational development and its value from that standpoint vastly outweighs any dollars and cents value that could be placed upon it, conservative estimates place the value of products produced by club members during the two years at more than a half-million dollars.

Our 4-H Club delegates to national affairs, such as the National Dairy Show, Eastern States Exposition, National Club Congress, and National Camp, have made fine records, the most notable being the winning of first place in dairy cattle judging in competition with teams from 25 other States. This is the fourth time that teams of 4-H Club boys have won this honor for Maryland and no other State has won it more than twice. Maryland girls have also won outstanding honors in national contests, among them being first place for each of the past two years on home canned products in competition at the National Club Congress in Chicago.

County and State exhibits and inspirational activities have expanded with the increased interest of local leaders and others in club work.

Insect and Disease Control

Extension forces have worked in close association with the officers of the State Horticultural Department in efforts to control insect pests and plant diseases. Work was done on the control of diseases of barley, beans, cabbage, cantaloupes, corn, cucumbers, Irish potatoes, apples, peaches, tomatoes, sweet potatoes, tobacco and wheat. Distinct progress has been made in reducing the heavy toll taken by plant diseases and some of the most serious losses have been almost entirely prevented. For example, losses from cucumber mosaic, which a few years ago amounted to 50% of the crop, have been reduced to 5%, with a saving of approximately \$90,000 a year for growers. The value of seed certification has been stressed and there has been a phenomenal increase in production and sale of certified seed potatoes in Maryland, as well as their use. As a result of several years' study, a method of determining the time to spray to prevent apple scab was devised and results show that in almost every case where trees were sprayed when recommended, scab was successfully controlled. Wildfire was very severe in tobacco seed beds in 1929 and effective methods for controlling this disease were developed and introduced among growers. Reference has been made to work on the control of diseases of canning crops and of wheat and barley.

Constant vigilance is necessary to control the ravages of insect pests and prevent invasion of the State by pests which have not before been present in large numbers. Spray service for growers of tree fruits has been continued during the two years and has constituted one of the most outstanding and most valuable projects. The Mexican

bean beetle campaign, in scope and results, both in control and education, was the best that has ever been observed in this State. One result demonstration conducted in 1930 included forty-two different dust and spray combinations for Mexican bean beetle and records were kept of their comparative effectiveness. This was viewed by canners, truckers, and experiment and extension workers from other states. Educational work on the injury and control of the Japanese beetle has been continued and expanded. Careful check has been kept at all times upon the infestation by this insect and much attention has been devoted to efforts to prevent its spread.

Late in the season of 1930, two essentially southern pests did serious damage and required control measures. The corn earworm became prevalent on late lima beans and tomatoes and the fall army worm did serious damage in some sections to lawns and to forage crops planted to replace feed destroyed by the drought. These are examples of the eternal vigilance and readiness that must be maintained in order to meet situations which develop with regard to control of insect pests, and to prevent the loss of many hundreds of thousands of dollars to growers of all kinds of crops.

Canning Crops Work

An appropriation by the General Assembly of \$10,000 a year for the encouragement and development of canning crops has made possible some very effective work in that line. Two specialists have devoted their whole time to this project.

A rather extensive program was outlined early in 1929, and, in the main, has been successfully carried out. In cooperation with the Tri-State Packers' Association, a project was launched to determine the feasibility of growing sweet corn for seed purposes and has proved moderately successful, in spite of unfavorable seasons. Tomato seed-saving activities have been unusually successful from many standpoints. The seed acreage was increased from about 50 acres in 1928 to 145 acres in 1929. Emphasis upon the advantages of producing tomato plants in cloth-covered beds has accomplished exceptional results. Records for 1929 show that approximately eight million plants were produced in protected beds, and that number was probably exceeded in 1930.

Work on the control of diseases of canning crops has been conducted during the two years, and has included efforts to develop methods whereby damage to beans, peas, tomatoes, and sweet corn may be reduced to a minimum.

The Ten-Ton tomato production contest has been continued and the number of entries has increased each year. In 1929, there were 127 growers enrolled with a total of 709 acres. Twenty-eight growers

made yields in excess of ten tons per acre. In spite of the severe drought in 1930, a few growers succeeded in making a ten-ton yield.

Agricultural Engineering

Four lines of Extension Work in Agricultural Engineering have been carried on: 1. Farm Structures; 2. Drainage; 3. Water Systems; and 4. Rural Electrification.

Each county agent was supplied with a set of building plans for 54 different farm structures. Copies of any of these plans are distributed free of charge to farmers who request them. Despite unfavorable conditions caused by the drought, 225 blue print plans have been sent to Maryland farmers in the last nine months. A very successful Rural Builders' School was held in Queen Anne's County. Nine drainage systems were laid out, resulting in the restoration to productivity of 100 acres of land. Definite assistance has been given many farmers in the installation of practical systems of water supply and sewage disposal.

Use of electricity on Maryland farms is increasing rapidly and special efforts have been made to supply information as to its practical and economical applications to farm and home needs.

Radio Service

Distinct progress has been made in the use of radio as a means for disseminating timely information on farm and home subjects. During the two-year period the Extension Service has cooperated with two broadcasting stations and is at present providing regular features for three stations. These consist of daily talks from one station, weekly talks from another, and talks every two weeks from a third. While it is difficult to estimate the value of this work, we are confident that the radio offers a means for bringing the benefit of the Service to a very large number of people in all parts of the State.

Negro Work

Local agents, both men and women, have been active in their efforts to improve conditions among the negro population of the State. Farmers' Institutes and community shows have also been the means of bringing contacts between colored farmers and the Extension Service, both in Southern Maryland and on the Eastern Shore. Some good demonstration work has been done with the men and women and with the boys' and girls' 4-H Clubs. Many of these activities have been in cooperation with the eastern branch of the University of Maryland, located at Princess Anne.

Cooperation of Farm Organizations

The Extension Service has enjoyed fine cooperation from the farmers' organizations of the State, including the Maryland Farm Bureau Federation, the State Grange, the State Dairymen's Association, the Tobacco Growers' Association, and affiliated organizations. There is much to be accomplished in the proper organizing of our farm people, but with the combined efforts of our forces and the farm leaders of the State, there is continued progress and we are hopeful that the foundation which has been laid will serve as the basis for more rapid development in coming years.

CONCLUSION

This report can only present a very inadequate summary of some of the more important activities of the Extension Service. A more complete report of the various projects conducted during the year 1929 is contained in the annual report of the Director, and a similar report will be issued shortly for 1930. Splendid cooperation on the part of the farmers and farm women of the State in carrying out the Extension program has been an important factor in the success of the work and is greatly appreciated. Appreciation is also due the county boards in the several counties for their sympathetic cooperation and encouragement. Although tax problems have been serious, no reductions have been made in the support given by the counties in their cooperation with the State and Federal government for maintenance of the county and home demonstration agents. The Service has a splendid force of men and women who are devoting their utmost energy and skill to rendering service to the rural people of the State. Although the Extension activities represent a substantial amount of money, the field for service is extremely large and demands are increasing.

The Service is indebted to Dr. H. J. Patterson, Dean of the College of Agriculture and Director of the Experiment Station, and his associates for their able assistance and sympathetic cooperation. The Director and members of the Extension staff are deeply appreciative of the interest and cordial support given to their every undertaking by President R. A. Pearson and by the officials in charge of the Extension Service, U. S. Department of Agriculture.

Respectfully submitted,

T. B. SYMONS,
Director.

The State Horticultural Department

To the President of the University:

General administration of the State Horticultural Department is under the Extension Service. This arrangement provides close co-operation and greater efficiency in the control of insect pests and plant diseases. Many phases of the work are conducted jointly by specialists in Extension for insect and plant disease control.

Report of the State Entomologist

The State Entomologist, Dr. E. N. Cory, is also Professor of Entomology in the University of Maryland and Entomologist of the Experiment Station, thus joining all phases of the work and placing all supervision and direction under one head. In addition to Dr. Cory, the staff consists of P. D. Sanders, who devotes full time to work of the State Horticultural Department, and Dr. G. S. Langford, Mr. Abrams, Mr. Graham and Mr. Henery, all of whom are employed on a part-time basis.

Scope of Work—The regulatory work has had very rapid development. Since 1920 the number of nurseries has increased from 54 to 186. This naturally increases the number of required inspections on imported nursery stock. Aside from the increase in nurseries, presence of the Japanese beetle requires a large amount of regulatory activity, in addition to the educational and control work that must be taken care of in connection with this insect. The number of special inspections and issuance of certificates for these inspections is constantly increasing. Some of the reasons are, a recent change in Canadian law requiring inspection at time of shipment, development of an extensive bulb industry on the Eastern Shore, and presence of potato tuber moth in the certified seed potato area of Worcester and Somerset Counties.

Experimental work in 1930 included the following subjects:

1. A study of the pine oils as insecticides.
2. Control of the potato tuber moth.
3. Mexican bean beetle control.
4. Use of treated bands for codling moth control.
5. Use of hot water for control of boxwood midge.
6. Codling moth investigational work.
7. Curculio investigational work.

Nursery Inspection—Nurseries are inspected by the Departments of Entomology and Plant Pathology. Certificates were issued to 135 nurseries in 1929 and inspections in 1930 totalled 163 nurseries and 34 individuals growing plants under contract. The Entomological staff made 116 of these inspections. On the whole, the nurseries were in good condition.

Quite a number of special inspections were made and certificates were issued to meet specific conditions or requirements. These included permit tags for individuals who desired to make small shipments of plants, certificates to meet the demands of Canadian law, certificates for export, inspection of narcissus bulbs, and inspection of imported nursery stock.

Mexican Bean Beetle—The Mexican bean beetle campaign conducted in 1929 was the best in scope and results that had ever been observed in this State, both in control and in education. This was due to two factors. First, injury to the bean crop in 1928 brought growers to a realization that control work had to be done; and, second, a carefully outlined campaign of education in regard to this pest was carried on through the early season, followed by demonstrations in the field and personal service to all who requested help.

At the beginning of the 1930 season, exceedingly large numbers of beetles emerged from hibernation and indicated that severe damage might be anticipated. With the advent of dry and exceedingly hot weather, however, the development of all stages was apparently retarded.

An extensive series of experimental and demonstration tests, which was started in 1929, was continued and enlarged in 1930. These tests consisted of field experiments on snap beans to determine the relative effectiveness of various materials that were being used in this section for Mexican bean beetle control, and to attempt to develop more effective and cheaper dusts and spray combinations for use in control of the insect. A number of significant and extremely valuable facts have been revealed by these experiments and they will be continued.

Japanese Beetle—The program of work for control of this insect may be divided into four major activities—scouting, control operations, quarantine enforcement and educational activities.

Scouting—To determine the value of control operations and the extent of spread of the beetle, the entire State was thoroughly scouted. Under a cooperative arrangement, scouts under the supervision of the U. S. Department of Agriculture were used on this work.

Control Operations—In 1929 a campaign of soil treatment was conducted, shade trees in the smaller towns were sprayed and about five thousand geraniol traps were maintained. During the past year control operations consisted entirely of the use of traps. All old

infestations were trapped except those in Baltimore City and its environs. Control work in this area was omitted, due to an ultimate change in policy by the Federal Plant Quarantine and Control Administration. During the year 4,501 traps were used, in or near which 3,671 beetles were caught. In the case of Delmar there was an actual reduction in the number of beetles caught compared with the number in 1929.

Quarantine Enforcement—The State Horticultural Department, with the approval of the State Board of Agriculture, has maintained a quarantine in cooperation with the Plant Quarantine and Control Administration of the U. S. Department of Agriculture, in an effort to prevent further spread of the beetle. Road patrols were stationed on all leading roads to prevent smuggling of infested products.

Maryland authorities have consistently opposed the inclusion of free territory in any quarantined area. With the cooperation of the University authorities, the growers and farmers of the State, and of Governor Ritchie, it was possible to give such assurance to the Federal authorities as to permit treatment of the isolated infestations and withhold Federal quarantine until 1930.

Since the beetle situation in 1929 did not differ greatly from that of the previous year, the Maryland quarantine authorities, supported by the Governor and the people, asked the Federal Administration to permit them to continue their past, and apparently successful policy—a policy which in no way jeopardized outside interests, but offered possibilities for reduction and retardation of beetle spread. However, the Plant Quarantine and Control Administration reversed its previous policy and proposed to place a large area of Maryland territory under quarantine. This the Maryland authorities, supported by the Governor and people, vigorously protested, as it would subject vast expanses of free territory to unrestrained invasion of the beetle. After numerous conferences and final appeal to the Secretary of Agriculture, the greatest concession that Maryland could secure from the Federal Government was an agreement whereby a considerable portion of the territory would be protected, which it had proposed to place under quarantine, but failed to protect Baltimore City and a large amount of surrounding free territory.

At a conference with Federal officials for the purpose of discussing quarantine regulations for 1931, Maryland authorities succeeded in obtaining an agreement whereby the regulations are much more nearly in line with the policy which they believe to be effective, adequate and sound.

Educational Activities—This office has been extremely active in disseminating information on the biology and control of Japanese beetle. An effort has been made to inform the people of the State regarding its importance and the necessity for preventing it from

gaining a foothold. Information cards, news releases, exhibits, tours and other methods have been used to spread timely information regarding the pest.

Other Insects—Numerous other insect pests could be cited, some of which are causing tremendous losses. Continued effort and constant vigilance are necessary, not only to keep in check the destructive insects which have been established in the State for a number of years and to develop more effective and more economical methods for their control, but also to prevent the introduction and spread of insects which have not heretofore been serious pests of Maryland crops. Work must be done each year to control San Jose scale, codling moth, potato tuber moth, plum curculio, and other insects which have levied more or less heavy toll on certain crops for several years and which would become a menace to important phases of Maryland farming if control efforts were relaxed. In addition, the large investment which the people of the State have in ornamental trees and plants justifies extensive efforts to protect them from damage by the many insect enemies of those particular classes of plants. Insect pests of homes, of animals, and even of human beings, such as mosquitos, all require constant effort to prevent them becoming so numerous as to cause serious damage. The demand and need for work in these many lines is much greater than can be met with the present force, facilities and funds.

Apiculture—Mr. Abrams has taken care of the major portion of this work. Talks were made at a number of meetings of the Maryland State Beekeepers' Association, and an effort has been made to reach the beekeepers not able to attend the Baltimore meetings by holding county meetings. In cooperation with the Maryland State Beekeepers' Association, a bee and honey exhibit was set up at the Timonium Fair, which attracted considerable attention to the bee industry of the State. Much work was done on the control of disease in apiaries. Those known to have been infected the previous year were re-inspected and all requests for inspection were complied with. In commercial apiaries, where infection occurred in a high percentage of colonies, treatment was allowed (not advised), whereas in cases involving infection of only several colonies in an apiary, burning of all infected material was ordered.

A great deal of information was collected and timely letters were sent to all beekeepers regarding expedient seasonal practices, especially with regard to feeding, due to the drought.

Report of the State Plant Pathologist

Plant disease work affects practically every person in the State, either directly or indirectly. It is a service, however, primarily in the

interests of rural people to aid them in producing better farm products and in doing it more economically. Prof. C. E. Temple serves as State Pathologist, while Dr. R. A. Jehle and Mr. H. A. Hunter serve as associates.

For effective and economic conduct of the service, the teaching, experimental, extension and regulatory work in Plant Pathology is closely coordinated. Members of the Staff prorate their time among the different branches of the work.

Two projects, wilt of peas and root rot of apple trees, suffice to illustrate the close relationship of the different kinds of pathological work referred to above.

Wilt of Peas—Work on the wilt disease of peas was begun in 1917 as an extension project in the form of a survey of the pea fields of the State to determine the extent of losses from the disease and to recommend rotation as a control measure. It was continued as a research project for a number of years in cooperation with the Wrightson Canning Company, until a highly wilt-resistant strain was developed and then, with Senator Fooks at his Mountain Lake canning plant, to further improve the strain and to increase the amount of seed. The seed of this variety, to be known as the Maryland Alaska, is now being multiplied at Ashton, Idaho and at Billings, Montana. In a few years sufficient seed will be available at the price of ordinary good Alaska seed to plant considerable acreage. The project will then become an extension piece of work again to establish use of the wilt-resistant Maryland Alaska variety on the wilt-infected farms of the State. This variety was reported 97% wilt-resistant in 1930 and Dr. J. C. Walker of the University of Wisconsin and Dr. F. W. Geise, who saw the Wisconsin tests, also reported that "The selection stood up in very good shape and seemed to be of good type."

Root Rot of Apple Trees—This disease was discovered on seedling trees shipped into the State, first from the Middle West and later on seedlings and older trees from other states and from France. In one instance a 50% loss on 90,000 grafts occurred. In another case 1,000 two-year-old trees shipped into the State were burned on account of the disease. This disease, discovered while doing regulatory work, became a research project for graduate students and is being actively investigated.

Nursery Inspection and Certification—This is an important service, rendered in cooperation with the State Entomologist. No nursery stock will be accepted for transporting by either the railroads or the post offices unless each container of the stock bears a certificate to the effect that the stock within has been inspected and is "free from injurious insect pests and plant diseases." If any infested or diseased

stock is discovered in the nursery or is intercepted in transit from or into the State or at its destination, the same may be destroyed or returned in the case of an out-of-state shipper, at his option and at his expense. The benefits of this inspection are evident and the service must be continued. During the last ten years the number of nurseries has increased rapidly and there are now 149 requiring inspection at least once each year.

Potato Wart and the Shipment of Potatoes into Canada—This disease was discovered in twenty gardens in the Lonaconing-Frostburg-Mt. Savage section about ten years ago. Since that time a quarantine of each garden and the use of only immune varieties for seed seem to have prevented spread of the disease. It is hoped that in time this procedure will result in the eradication of the wart disease.

Even though it is confined to a small area in the mountains, it has been necessary, in spite of explanations and protests, to certify as free from the disease all shipments of potatoes from the State intended for the Canadian markets. Potatoes from Maryland not accompanied by such a certificate, signed by an authorized plant pathologist, have been refused entry. Many carloads of potatoes are shipped each year from the Eastern Shore into Canada and it will be necessary to continue the certification service, or discontinue shipment of potatoes to that market.

Seed Certification—This service is based on the sound principle that farmers have a right to know the relative merits of seeds available for planting purposes. Certified seeds also benefit farmers who produce them, as they sell for higher prices, and also the consumers, because they produce more abundant products of higher quality. On account of these benefits, demands for the service have increased more rapidly than facilities for meeting them.

Peach Yellows—It is only by continuous and persistent attention to peach orchards by all members of the staff that the yellows disease has been held in check. All peach growers have given splendid cooperation in the eradication of trees diseased with the yellows, but continued vigilance will be essential for protection of the peach crop of the State.

Phony Peach Disease—This disease has been discovered in Georgia and certain other Southern States and is considered very destructive. Fortunately, it has not been reported in Maryland or other Northern States as yet, but careful inspections are necessary, so that, if it should be found, it may be eradicated before it becomes wide-spread.

Diseases of Canning Crops—H. A. Hunter, Extension Pathologist, Canning Crops, is in charge of this project. It is administered as an extension project, but some phases of the work cannot be separated from research. Distinct progress has been made in developing methods

for control of blight and anthracnose of beans. The importance of this work is indicated by the fact that anthracnose alone has been known to completely destroy as much as seventy acres of beans for a single grower. Attention has also been given to diseases of all other important canning crops in the State, especially to the control of tomato diseases.

Growth of Interest in Plant Diseases—Interest in plant diseases has shown a decided increase during the last two years. This is evident from the greater number (hundreds) of specimens sent in for identification, the increased number of requests for control measures, and the requests for investigation of certain diseases.

CONCLUSION

A tremendous amount of work has been conducted by the officers of the Department during the past two years. The difficulties in preventing the spread of the Japanese beetle and protecting the interests of the growers and the State have required much time of the officers and director. The sympathetic and able assistance of President Pearson and members of the Board of Regents and Governor Ritchie have enabled us to save the State thousands of dollars. We are glad to have the cooperation of the Federal authorities in prosecuting this coming year's work.

Respectfully submitted,

T. B. SYMONS,
Director.

Live Stock Sanitary Service

*To the President of the University and Executive Officer,
Maryland State Board of Agriculture:*

The following is a report of the work of the Live Stock Sanitary Service of the State Board of Agriculture from October 1, 1928 to September 30, 1930.

While bovine tuberculosis eradication and hog cholera control work have been our main projects, the prevalence of contagious abortion (Bang Disease) in cattle, the losses incident to this disease, and the numerous requests of herd owners that more extensive work be done by the Board of Agriculture to control and eliminate this disease, have made it necessary for us to adopt this project as one of importance. In order to be better prepared to handle this proposition, it has been necessary to enlarge the Live Stock Sanitary Service and Biological Laboratory of the University of Maryland at College Park known as the Todd Laboratory and to add additional equipment. This has been done and we are now conducting work on this project. Better laboratory facilities also enable this Department to aid the poultry interests by making investigations of diseases of fowl. The increase in the poultry industry in Maryland makes it necessary for the State to aid the farmers in every way possible to control the diseases of poultry.

During the past two years very successful efforts have been made to eliminate scabies among sheep in the State. Scabies was found on eighteen premises, the sheep, about eight hundred, dipped, and precautionary measures adopted to prevent the spread of infection.

Other contagious or infectious diseases of live stock reported during the biennium have shown a marked decrease. No cases of anthrax have come to the attention of the State authorities and no cases of glanders in horses have been reported.

The following reports of those in charge of tuberculosis eradication, hog cholera control and contagious abortion, poultry disease control and general laboratory work are herewith submitted.

MR. JAMES B. GEORGE, *Director, Live Stock Sanitary Service,
Maryland State Board of Agriculture, Baltimore, Maryland.*

Dear Sir: There is herewith submitted a report on Bovine Tuberculosis Eradication for the biennium ending September 30, 1930, the Maryland Live Stock Sanitary Service and the U. S. Bureau of Animal Industry cooperating.

Much progress has been made in reducing the infection in the State and there are now under supervision 34,605 herds with 234,969 cattle. Of these there are 16,985 herds, with 80,728 cattle, once tested and free of tuberculosis, and 9,642 herds, in which there are 121,685

cattle, fully accredited. One county is accredited, and all of the cattle in eleven counties have been once tested. In six of these counties all cattle have been retested. In this period the tuberculin test has been applied to 11,123 original herds with 60,758 cattle and 5,683 reactors were found. Retests were made on 23,808 herds with 312,857 cattle and 3,948 reactors were found, making in all 34,931 herds tested with 373,615 cattle and 9,631 reactors.

All cattle in herds from which milk is being shipped to Baltimore, Hagerstown, Cumberland, Frederick, Annapolis, Washington and Philadelphia have been tested, allowing the dairymen to comply with their market requirements, as well as having safe milk for home consumption.

Much of the success of this undertaking has been due to the appropriations made by thirteen counties to pay part of the salaries and expenses of inspectors working in each of these counties. These appropriations were made at the solicitations of the live stock owners, who wished to have their herds under supervision of the State and U. S. Bureau of Animal Industry for the eradication of tuberculosis.

The work has had, from the beginning, the full cooperation and support of the Dairy Associations, the Farm Bureau, the Grange, the Municipal Health Departments and the milk dealers.

The maximum amount which could be paid for cattle which reacted to the tuberculin test was raised from \$25.00 to \$35.00 per head for grades and from \$50.00 to \$70.00 per head for pure breds, by the U. S. Bureau of Animal Industry, effective by Congressional Order on February 18, 1929, and this allowed the State to raise the appraisalment of grades from \$75.00 per head to \$105.00 and that of pure breds from \$150.00 per head to \$210.00. We believe that this increase allows us to make appraisements that are fair to the cattle owners and to the State and the Federal Government.

All reactors are shipped to the Union Stock Yards, Baltimore, where they are sold each day on competitive sealed bids to the highest bidder. We are convinced that this system has resulted in the best possible prices being received for the cattle sold. Separate pens and separate scales are used at the Stock Yards, so that no healthy cattle can come in contact with reactors.

The cleaning and disinfecting of premises where reactors are found is done by the owner, under the instruction of the veterinary inspector making the test.

For the protection of the live stock industry and the public health it is often found necessary to use the veterinary inspectors employed on tuberculosis eradication in making inspections for other diseases, such as rabies, para-tuberculosis, contagious abortion, etc.

Very truly yours,

E. B. SIMONDS,
*Inspector in Charge,
Tuberculosis Eradication.*

MR. JAMES B. GEORGE, *Director Live Stock Sanitary Service,
Maryland State Board of Agriculture, Baltimore, Md.*

Dear Mr. George: I have the honor to submit the following report of the hog cholera work in Maryland for the biennium ending September, 30, 1930.

The cooperating parties are the Live Stock Sanitary Service of the Maryland State Board of Agriculture, the Extension Service of the University of Maryland and the Bureau of Animal Industry, of the United States Department of Agriculture.

The work was conducted until July 1, 1930 by four veterinarians and one secretary when, in order to better cope with the situation, another veterinarian was added to the force. Three veterinarians and one secretary are paid by the State of Maryland, while two veterinarians are paid by the United States Bureau of Animal Industry. With the exception of some stationery, all supplies are furnished by the United States Bureau of Animal Industry.

The following table shows the activities of the veterinarians over the period noted.

| | |
|--|---------|
| Number of Meetings Attended..... | 169 |
| Number Addressed | 95 |
| Total Attendance | 14,049 |
| Interviews: | |
| Farmers | 9,721 |
| Veterinarians | 1,099 |
| Others | 3,538 |
| Total | 14,358 |
| Farms Visited on Call..... | 1,513 |
| Voluntary Visits for Observation and Advice..... | 3,344 |
| Autopsies | 288 |
| Premises Carded | 524 |
| Premises Cleaned and Disinfected..... | 2 |
| Outbreaks Reported | 920 |
| Demonstration of Treatment: | |
| S. A. | 12 |
| V. S. | 1 |
| Total | 13 |
| Number of Hogs in Demonstration: | |
| S. A. | 266 |
| V. S. | 6 |
| Total | 272 |
| Attendance at Demonstrations..... | 123 |
| Assisted Practitioners in Treating Herds: | |
| Well Herds | 1 |
| Number Hogs | 34 |
| Sick Herds | 3 |
| Number Hogs | 80 |
| Laymen Trained to Administer the Treatment: | |
| Serum Alone | 12 |
| Miles Traveled: | |
| Train | 5,998 |
| Other Conveyances | 112,757 |
| Total | 118,755 |
| Diagnosis: | |
| Cholera | 920 |
| Pneumonia | 20 |
| Tuberculosis | 2 |
| Other Diseases and Conditions..... | 345 |

The hog cholera situation for the two-year period was very satisfactory. The disease was reported to exist on only nine hundred twenty premises, which is a decrease of 42% from the previous biennium. In this connection it is interesting to note that four hundred twenty-two, or 46% of the outbreaks occurred in the first two months of the biennium, viz: October and November, 1928. This was due to the fact that hog cholera was very prevalent in the Western States and this resulted in a great deal of infected pork entering the channel of trade. Owing to the late fall, swine growers were unable to slaughter their hogs, and were obliged to buy pork for family use. Regardless of the warnings that have been given, times without number, bones, rinds or scraps of infected pork reached the hogs via the swill pail with disastrous effect in many instances.

While the decrease in number of cases of the disease was gratifying and very encouraging, it does not show the improvement made as much as an analysis of the type of outbreaks experienced.

Five hundred sixty-nine of the outbreaks were of the backyard type, that is, only a few hogs kept in small pens under backyard conditions, while only three hundred fifty-one occurred on farms where hogs are bred and raised. The latter are really the only outbreaks which are of any importance to the swine industry, and the only ones which would receive consideration in most States. Moreover, garbage feeding plants were maintained on forty-eight of these farms. This leaves only three hundred three farms where some effort was made to maintain sanitary conditions, on which the infection was introduced.

It is estimated that there are thirty thousand farms in Maryland on which hogs are bred and raised. Therefore, the disease occurred during the two-year period on only 1% of the farms in the State. This is 50% less than the previous biennium.

On the premises where outbreaks were reported to exist during the two-year period, there were sixteen thousand seven hundred fifty-nine hogs when the disease appeared. Of these, three thousand fifty-eight were dead and three thousand six hundred two were visibly sick before the cases were reported. Four thousand nine hundred thirty-one, or 30% of all hogs involved were in one hundred thirty-one garbage feeding plants. It is also interesting to note that in three hundred sixty-eight, or 40% of the outbreaks, only five hogs or less were involved.

TABLE SHOWING OUTBREAKS BY MONTHS

| | 1928 | 1929 | 1930 |
|-----------------|------|------|-------|
| January | | 23 | 13 |
| February | | 21 | 16 |
| March | | 22 | 12 |
| April | | 19 | 22 |
| May | | 7 | 16 |
| June | | 15 | 5 |
| July | | 30 | 6 |
| August | | 37 | 21 |
| September | | 42 | 28 |
| October | 294 | 50 | ..... |
| November | 128 | 46 | ..... |
| December | 25 | 22 | ..... |
| Total | 447 | 334 | 139 |

The following table gives the outbreaks by counties and shows the percentage of total hogs in the State in each county.

| | Percentage | Outbreaks by Counties |
|-----------------------|------------|--------------------------|
| Anne Arundel .. | 3 % | 56 |
| Allegany | 1.5% | 11 |
| Baltimore | 7 % | 32 |
| Calvert | 1.6% | 14 |
| Caroline | 2.7% | 38 |
| Carroll | 11.5% | 24 |
| Cecil | 3.9% | 33 |
| Charles | 3.4% | 23 |
| Dorchester | 2.2% | 54 |
| Frederick | 11.3% | 61 |
| Garrett | 2 % | 0 |
| Harford | 5.2% | 19 |
| Howard | 4 % | 41 |
| Kent | 2.6% | 40 |
| Montgomery | 7.2% | 68 |
| Prince George's | 4.5% | 78 |
| Queen Anne | 4.3% | 50 |
| St. Mary's | 3.3% | 18 |
| Somerset | 1.8% | 45 |
| Talbot | 2.9% | 27 |
| Washington | 10 % | 71 |
| Wicomico | 1.6% | 58 |
| Worcester | 2.5% | 59 |
| Total | | 920 |

Eight hundred sixty-six of the outbreaks were primary, or new outbreaks, while fifty-four, or only 6%, were secondary, or due to the spread of the infection to hogs on nearby premises. This is the smallest per cent of secondary outbreaks that has been registered for any similar period since the hog cholera work was inaugurated in Maryland.

Of the eight hundred sixty-six primary, or new outbreaks, seven hundred ninety-four, or 92%, were apparently due to the feeding of infected pork in garbage, table scraps, kitchen swill, etc. Forty-eight were due to the introduction of infected hogs, while three were the result of the abuse of the double treatment. Four were due to unburied carcasses, which were left by departing tenants. In one instance, the carcass of an infected hog was hauled from another State and deposited in a field where other hogs had access to it. In sixteen instances, the owner could not, or would not, give any information on which to base the source of infection.

Of the fifty-four secondary outbreaks, forty-two were due to the movement of sick hogs, or permitting sick or well hogs to run at large, or to line fences. Nine were due to a combination of unburied carcasses and loose hogs. One outbreak was apparently due to drainage from a nearby hog lot where the disease existed, while another was due to the movement of a drag from a lot in which sick hogs were confined, to one where well hogs could have access to it. In one case, no history could be obtained on which to base the source of infection.

| | |
|-----------------------------|-------|
| Hog Cholera | 920 |
| Digestive Trouble | 223 |
| Deficiency Disease | 55 |
| Parasites | 24 |
| Pneumonia | 20 |
| Injury | 12 |
| Poisoning (Salt and Forage) | 10 |
| Infectious Bronchitis | 4 |
| Septicemia | 4 |
| Otitis Media | 3 |
| Botulism | 2 |
| Tuberculosis | 2 |
| Coryza and Bronchitis | 1 |
| Abortion | 1 |
| Carditis | 1 |
| Lameness | 1 |
| Deformed Feet | 1 |
| Tetanus | 1 |
| Dematitis | 1 |
| Metritis | 1 |
| Total | 1,287 |

It is worthy of note that Maryland is the only State in which practically all outbreaks of diseases among swine are investigated, advice given the owners on the care and attention needed by the animals, and definite data regarding the disease collected, compiled, and published. Moreover, the research work conducted during the two-year period in connection with the routine investigation of diseases of swine, has emphasized the merit of the Maryland Plan for Prevention of Hog Cholera. A modified form of the plan has been

adopted in other States, and it is evident that sanitarians and official veterinarians charged with the responsibility of protection of the swine industry of the United States are more and more becoming converts to the fact that the employment of sanitary measures is the only means by which outbreaks of hog cholera can be prevented and the disease eventually eradicated.

Respectfully yours,

I. K. ATHERTON,
Inspector in Charge of Hog Cholera Work.

DR. H. J. PATTERSON, *Dean and Director, Experiment Station,
University of Maryland, College Park, Maryland.*

and

MR. J. B. GEORGE, *Director, Live Stock Sanitary Service,
816 Fidelity Building, Baltimore, Maryland.*

Sirs: I herewith submit for your consideration the following report on the activities of the Biological and Livestock Sanitary Service Laboratories, for the biennium ending September 30, 1930.

As the activities of the two laboratories have been handled as a single unit, they have not been separated here. Therefore, the portion of this report dealing with the work of the Biological Laboratory is for the attention of Dr. H. J. Patterson, Director of the Experiment Station. Likewise, the portion of the report dealing with the Livestock Sanitary Service activities is for the attention of Mr. J. B. George, Director of the Livestock Sanitary Service.

The past two years has been a period of unusual activity. During the year 1928-1929 the staff was seriously handicapped in meeting the demands legitimately placed upon it, as the facilities, including both man power and physical plant, had not been enlarged to care for the increased volume of work.

During the past year, funds were made available for the construction of an addition to the Todd Laboratory. This building has now been finished and is nearly equipped. The completed building, while not so large and elaborately equipped as some, is nevertheless an up-to-date Animal Disease Laboratory.

To further assist the animal owners, the State Board of Agriculture has passed regulations establishing a Bang Disease Free Accredited Herd System. This is in certain respects similar to the Tuberculosis Free Accredited Herd System. It does not provide for the slaughter of diseased animals or the payment of indemnity. It does, however, provide a means of assisting the farmer in solving his own problems in handling this disease. Further, it places the State's stamp of approval on the healthy herd and makes healthy

seed stock available for breeding purposes. From a public health viewpoint, it focuses attention on one of the angles which must be considered in preventing the disease known as undulant fever in man.

Laboratory Examinations

The following examinations of animals or materials have been made, some of which necessitated field trips.

| | 1928-29 | 1929-30 |
|---|---------|----------------|
| Milk Examinations | 1,625 | 1,874 |
| Mastitis Cases | 427 | 236 |
| Rabies (4 Positive-11 Negative) | 15 | 8 (2 positive) |
| Hogs Examined or Treated..... | 300 | 432 |
| Examinations for Parasites..... | 37 | 52 |
| Anthrax (Both Negative)..... | 2 | ..... |
| Tuberculosis | 63 | 105 |
| Sheep Diseases | 123 | 202 |
| Black Leg (Negative)..... | 1 | 1 |
| Johne's Disease Examinations..... | 110 | 23 |
| Physical Examinations | 53 | 134 |
| Post Mortem Examinations..... | 71 | 87 |
| Periodic Ophthalmia | 5 | 10 |
| Cattle Bled | 730 | 1,247 |
| Bang Disease Blood Tests..... | 7,521 | 11,014 |
| Tonsil Examinations | 34 | 83 |
| Bang Disease Milk Tests (Guinea Pigs)..... | 26 | 78 |
| Poultry Examined | 766 | 1,041 |
| Blood Samples Tested for Bacillary White Diarrhoea | 5,875 | 6,244 |
| Examinations of Poison Feeds..... | 23 | 14 |
| Miscellaneous Diseases and Examinations..... | 428 | 537 |
| Field Trips | 83 | 94 |
| Miles Traveled | 5,394 | 6,224 |

Preparation and Distribution of Biologics

| Prepared and Distributed | 1928-29 | 1929-30 |
|-------------------------------|-------------|-------------|
| Autogenous Bacterins | 33,615 c.c. | 30,075 c.c. |
| Tuberculin | 16,415 c.c. | 13,345 c.c. |
| Avian Tuberculin | 3,500 c.c. | 3,025 c.c. |
| Johnin | 1,000 c.c. | 850 c.c. |
| Legume Inoculum Cultures..... | 6,898 | 7,106 |
| Chickenpox Vaccine | 30,000 | 11,700 |

Distributed Only

| | | |
|------------------------------|--------------|--------------|
| Anti-Hog-Cholera Serum | 545,900 c.c. | 206,450 c.c. |
| Hog Cholera Virus..... | 2,010 c.c. | 690 c.c. |

Numerous other articles were distributed such as disinfectant, syringes, thermometers, needles, etc.

Research

The following subjects have received attention during the past two years:

1. To find the lethal dose for poultry of certain drugs commonly used in treating some of the diseases to which they are subject.

This project has been discontinued, as our Chemist, Dr. H. B. McDonnell, who was directly responsible for the work, was transferred to another department.

2. The determination of the best practical method of limiting the infection and reducing the exposure in infected herds when more drastic means of control are impractical.
3. The maintenance of a small reacting herd for the study of Bang Disease.
4. A Study of the methods of transmission of the causative agent of Blackhead in turkeys.
5. A Study of the specificity of the agglutination test for Bang Disease.
6. A study of diseased tonsils removed from people drinking raw milk.
7. A study of the economics of clean and infected herds (Bang Disease).
8. A herd survey of reacting animals to determine the relation of the titer of the reaction to udder infection.
9. A study of the effect of pasteurization temperatures upon the Bang Disease organism and the agglutinins in the milk.
10. A study of the bacterial flora of hams and their relation to odor and flavor.

Papers Published

The following papers have either been published, or the study has been completed and the data are ready for publication:

1. A Study of the Intravenous Test as a Means of Diagnosing Bovine Tuberculosis, by Dr. L. J. Poelma. Published October, 1929.
2. The Effect of Lactose on the Survival of the *E. coli* When Heated to 145° F. for 30 Minutes, by E. A. Beavens. Published March, 1930.
3. The *E. Aerobactor* Group as an Index to Proper Pasteurization, by E. A. Beavens. Published March, 1930.
4. Report of Committee on Dairy Products and Eggs, by Shrader, Buchanan, Grim, Mack and Pickens, for the American Public Health Association. Published May, 1930.
5. A Study of the Bacterial Content of the Fore Milk of Cows, by J. E. Faber. Published November, 1930.

6. The Examination of 2,433 Human Sera for Agglutinins of Brucella Abortus, by M. F. Welsh. Published September, 1929.
7. Case Report of Bacillary White Diarrhoea in Young Turkeys, by DeVolt & Gow. Published November, 1930.
8. The Bacterial Content of Baby Foods and Milk Modifiers, by H. E. Mattoon. Has not been published to date.
9. The Practicability of the Use of Thermophiles in Sewage Reduction, by T. Dozois. This paper is in the hands of the publishers.
10. A Study of the Different Substances Used in the Preservation of Biologics, by W. G. Malcolm. This paper is in the hands of the publishers.

Recommendations

In order to properly strengthen the projects now being studied, to speed up the work and to enlarge our field of activities, we are badly in need of an Economist, familiar with cost accounting on the Dairy Farm; a Pathologist (microscopic); a Biological Chemist (animal); a Field man for Poultry Diseases, together with some additional equipment, and travelling expenses for these men. Funds are also badly needed to increase the salaries of certain members of the staff. This will require in round numbers, \$20,000.00 per year.

In conclusion, may I say that the Animal Industry and those responsible for it in the State of Maryland are to be congratulated for their efforts in the building of one of the smaller but most efficient animal disease control organizations in this country.

Very respectfully submitted,

E. M. PICKENS,
Pathologist and Bacteriologist.

The livestock disease control work in Maryland has been aided materially by the active cooperation of the State Extension Service, the State Experiment Station, and the practicing veterinarians of the State.

Respectfully submitted,

JAMES B. GEORGE,
Director.

Maryland State Board of Agriculture

Live Stock Sanitary Service

STATEMENT OF APPROPRIATION AND EXPENDITURES FOR THE YEAR ENDING SEPTEMBER 30, 1929

| | <i>Appropriation</i> | <i>Expenditures</i> | <i>Balances</i> |
|---|----------------------|---------------------|-----------------|
| Salaries and Wages..... | \$46,103.86 | \$46,103.86 | |
| OPERATING EXPENSES: | | | |
| Traveling | 10,258.19 | 10,083.19 | \$175.00 |
| Transportation | 5.38 | 5.38 | |
| Communication | 800.00 | 800.00 | |
| Office Supplies and Stationery | 469.54 | 469.54 | |
| Printing | 201.29 | 201.29 | |
| Medical and Surgical Supplies | 750.84 | 750.84 | |
| Laboratory Supplies | 95.66 | 95.66 | |
| Other Supplies | 1,150.00 | 358.36 | 791.64 |
| Office Equipment | 536.69 | 536.69 | |
| Rent | 3,898.64 | 3,898.64 | |
| T. E. Indemnities..... | 98,179.91 | 74,279.60 | 23,900.31 |
| Contagious Abortion Work..... | 1,000.00 | 113.70 | 886.30 |
| Quarters for the Housing of Cows for Experimental Purposes (C. A.)..... | 2,000.00 | 1,024.79 | 975.21 |
| Repairs to and Enlarging of Live Stock San. Lab., New Heat. Plant, Plumbing and Water and Sewer Connec- tions | 14,800.00 | | 14,800.00 |
| Isolation Quarters for Dis- Animals | 3,240.00 | | 3,240.00 |
| Office Equipment | 1,500.00 | | 1,500.00 |
| Equipment, Housing Experi- mental Birds in Study of Poul. Dis. | 2,000.00 | | 2,000.00 |
| Experimental Animals, Includ- ing Birds and Guinea Pigs | 2,500.00 | | 2,500.00 |
| Laboratory Equip. and Re- frigeration | 6,700.00 | | 6,700.00 |
| Total Operating Expenses | \$150,086.14 | \$92,617.68 | \$57,468.46 |
| SUMMARY: | | | |
| Total Appropriation | | \$196,190.00 | |
| Total Expenditures: | | | |
| Salaries and Wages..... | \$46,103.86 | | |
| Oper. Expenses | 92,617.68 | | 138,721.54 |
| Balances reserved for obli- gations not paid before 9-30-29 | | | \$57,468.46 |

STATEMENT OF UNEXPENDED BALANCES OF BUDGET
1928-1929 CARRIED OVER INTO 1930 AND
EXPENDED YEAR 1929-1930

Balances reserved for obligations not paid before September 30, 1929 (see statement [\$57,468.46] year ending September 30, 1929).

| | <i>Balance</i> 1928-29 | <i>Expended</i> 1929-30 | <i>Balance</i> |
|---|---------------------------|----------------------------|----------------|
| Traveling | \$175.00 | \$160.09 | \$14.91 |
| Other Supplies | 791.64 | 787.23 | 4.41 |
| Indemnities, Tuberculosis | | | |
| Eradication | 23,900.31 | 16,399.69 | 7,500.62 |
| Contagious Abortion Work..... | 886.30 | 884.22 | 2.08 |
| Quarters to House Cows for | | | |
| Exper. Purposes (Con- | | | |
| tagious Abortion Work)..... | 975.21 | 944.30 | 30.91 |
| Repairs to and enlarging Live- | | | |
| stock Sanitary Labora- | | | |
| tory, etc. | 24,357.02 | 24,357.02 | ..... |
| Office Equipment | 500.00 | 500.00 | ..... |
| Equipment, Housing Experi- | | | |
| mental Birds, etc..... | 500.00 | 490.08 | 9.92 |
| Experimental Animals, includ- | | | |
| ing Birds and Guinea Pigs | 2,500.00 | 941.78 | 1,558.22 |
| Laboratory Equipment and Re- | | | |
| frigeration | 2,882.98 | 2,864.07 | 18.91 |
| Total..... | \$57,468.46 | \$48,328.48 | \$9,139.98 |
| Reverted to State Treasury 9-30-29..... | \$7,500.31 | | |
| Reverted to State Treasury 9-30-30..... | 1,639.67 | | \$9,139.98 |

STATEMENT OF RECEIPTS, EXPENDITURES, AND BALANCES
FOR THE YEAR ENDING SEPTEMBER 30, 1930

| | <i>Receipts</i> | <i>Expenditures</i> | <i>Balances</i> |
|---|-----------------|---------------------|-----------------|
| Salaries and Wages..... | \$53,883.78 | \$53,883.78 | ..... |
| OPERATING EXPENSES: | | | |
| Traveling | 10,462.27 | 10,462.27 | ..... |
| Transportation | 29.84 | 29.84 | ..... |
| Communication | 800.00 | 800.00 | ..... |
| Office Sup. and Stationery..... | 415.16 | 415.16 | ..... |
| Printing | 242.50 | 209.75 | 32.75 |
| Medical and Surg. Supplies..... | 697.73 | 697.73 | ..... |
| Laboratory Supplies | 99.44 | 99.44 | ..... |
| Other Supplies | 1,422.05 | 780.89 | 641.16 |
| Office Equipment | 661.56 | 255.56 | 406.00 |
| Other Equipment | 261.90 | ..... | 261.90 |
| Rent | 3,900.64 | 3,900.64 | ..... |
| Indemnities, Tuber. Erad..... | 107,313.13 | 75,408.04 | 31,905.09 |
| Contagious Abortion Work..... | 5,000.00 | 781.06 | 4,218.94 |
| Isolation Quarters for Diseased Animals and Equip..... | 5,000.00 | 3,675.90 | 1,324.10 |
| Laboratory and Other Supplies Cont. Abort. and Poultry Diseases | 2,551.99 | 1,456.30 | 1,095.69 |
| Equipment, Contagious Abort. and Poultry Diseases..... | 3,000.00 | 1,124.27 | 1,875.73 |
| Traveling, Contagious Abort. tion and Poultry Diseases | 448.01 | 448.01 | ..... |
| Total..... | \$196,190.00 | \$154,428.64 | \$41,761.36 |
| Balances reserved for obliga- tions not paid before Sep- tember 30, 1930..... | ..... | \$41,761.36 | ..... |
| | \$196,190.00 | \$196,190.00 | |

STATEMENT OF EXPENDITURES FROM BUDGET 1928-1929

| | <i>Appropriation</i> | <i>Expenditures</i> |
|-------------------------------|----------------------|---------------------|
| SALARIES: | | |
| 1. Executive Officer | \$2,500.00 | \$2,500.00 |
| 2. Executive Secretary | 500.00 | 500.00 |
| 3. Assistant Secretary | 400.00 | 400.00 |
| Total Salaries | \$3,400.00 | \$3,400.00 |
| OPERATING EXPENSES: | | |
| 4. Traveling | \$492.20 | \$492.20 |
| 5. Office Supplies | 295.28 | 295.28 |
| 6. Rent | 812.52 | 812.52 |
| Total Operating Expenses..... | \$1,600.00 | \$1,600.00 |
| SUMMARY: | | |
| Total Appropriation | \$5,000.00 | |
| TOTAL EXPENDITURES: | | |
| Salaries | \$3,400.00 | |
| Oper. Exp. | 1,600.00 | |
| | \$5,000.00 | \$5,000.00 |

STATEMENT OF RECEIPTS, EXPENDITURES, AND BALANCES
FOR THE YEAR ENDING SEPTEMBER 30, 1930

| | <i>Receipts</i> | <i>Expenditures</i> | <i>Balances</i> |
|---|-------------------|---------------------|-----------------|
| Salaries and Wages..... | \$3,400.00 | \$3,400.00 | ..... |
| OPERATING EXPENSES: | | | |
| Traveling | 556.11 | 556.11 | ..... |
| Communication | 298.24 | 298.24 | ..... |
| Office Supplies and Stationery | 868.18 | 89.08 | 779.10 |
| Printing | 64.95 | 64.95 | ..... |
| Rent | 812.52 | 812.52 | ..... |
| Total | \$6,000.00 | \$5,220.90 | \$779.10 |
| Balances reserved for obligations not paid before September 30, 1930..... | | \$779.10 | |
| | <u>\$6,000.00</u> | <u>\$6,000.00</u> | |

INVENTORIES

SUMMARY:

| | <i>Office</i> | <i>Other</i> | <i>Total</i> |
|---|---------------|--------------|--------------|
| Total Office and Other Equipment— | | | |
| Inventory as of 9-30-28..... | \$5,950.13 | \$1,067.48 | \$7,017.61 |
| Office Equipment Purchases from September 30, 1928, to September 30, 1930 | 1,272.12 | ..... | 1,272.12 |
| Other Equipment Purchases from September 30, 1928 to September 30, 1930 ..... | ..... | 16.23 | 16.23 |
| Total | \$7,222.25 | \$1,083.71 | \$8,305.96 |
| Deductions from September 30, 1928, to September, 1930— | | | |
| Refrigerator | \$60.00 | | |
| Pans | 9.66 | | |
| | 69.66 | | 69.66 |
| Ford Automobile | \$434.35 | | |
| Hubometer | 11.25 | | |
| Sprayers | 61.74 | | |
| | | 507.34 | 507.34 |
| Transfer of one desk from Office to Field Office | 18.00 | 18.00 | |
| Total Office and Other Equipment Inventory as of September 30, 1930 | \$7,134.59 | \$594.37 | \$7,728.96 |

Respectfully submitted,

JAMES B. GEORGE,
Director.

Eastern Branch of the University of Maryland

To the President of the University:

The work of the Eastern Branch of the University of Maryland, known also as Princess Anne Academy, located at Princess Anne, Md., has been carried on during the last biennium quite successfully.

The faculty consists of ten men and three women. The work of the school includes the three upper classes of the high school and two years of college work above the high school and in addition for men—agriculture, horticulture, animal husbandry, poultrycraft, wood-working, and ironworking. For women—household economy, including cooking, sewing and simple dressmaking.

The enrollment for the biennium is as follows:

| | Men | Women | Total |
|----------------|-----|-------|-------|
| 1928-1929..... | 85 | 76 | 161 |
| 1929-1930..... | 67 | 71 | 138 |

All students enrolled are required to pursue industrial subjects along with scholastic subjects of the course.

The staple crops for this section, wheat, corn, oats, and rye, have shown considerable increase in yield with the exception of the past year which on account of the drought there was a considerable decrease in farm productions. Tomatoes, soy beans, and hay have also shown an increase in yield except last year. Notwithstanding the drought, the corn crop at the Eastern Branch showed an exceptional yield over previous years.

The land has been improved by tile drainage. Three acres of experimental plots have been cultivated under the direct supervision of the faculty of the University of Maryland.

The orchards have been improved and market gardening is being developed. The part of the campus not devoted to cropping has been greatly improved in appearance.

The farm carries livestock of selected grade; percheron horses, guernsey cattle and hamshire hogs. The fowls have been increased in number from 350 old birds to 623 and from 500 young chickens to 1,100. There is great need of changing the present location of the poultry plant site to a place better adapted to poultry production. Real incubator building is one of the urgent necessities.

The work in blacksmithing is directed to the upkeep and repair of tools and equipment of the school. The students in this depart-

ment are taught both the simple work of blacksmithing and how to make repairs to all farm equipment as well as to aid in the care of the heating plant of the school. More than \$2,000 worth of work has been accomplished in this way by the department.

The greater part of the work of this department is done on repairs to buildings and furniture. Simple furniture is also built for the needs of the school. A great deal of the painting of buildings inside and out such as interior decorations is done by this department. Forty-five students have been enrolled in this department during the past two years and a conservative estimate shows that about \$3,100.00 worth of work has been done.

This department has done the printing for the school and has also run small job press for outside work. Thirty-two students were enrolled the last two years.

Thorough courses in cooking and the study of food values are taught the girls during this course. Domestic art is also taught, and the young women before graduation make their own clothes. They are taught the art of mending and remaking of old garments as well as new work. They are taught to use machines as well as to do hand work. Those who complete these courses find ready employment either in schools or in many of the best families of the country.

The Legislature appropriated \$2,000.00 for improvements which has aided very greatly in the painting of the girls' dormitory, four cottages for teachers, the iron-working department building, and repairs to the State farm cottage and green house. By means of this fund an entirely new roof was placed on the building designated as the Pinkett cottage and siding placed on the state cottage together with renovation of four rooms on the interior of said cottage.

Other improvements have been made through the industrial departments during the biennium.

The plan of the institution is to eliminate the high school courses by gradual process. At the beginning of the next school year the first year of high school will be dropped. The next year the second year of high school is to be dropped and the following year the third year of high school, at which time the third year of college will be added (two years of the college now being in operation). When the fourth year of the high school has been taken off, the fourth year of the college will be added. It is hoped that this may be accomplished by 1934.

Steps that have been taken to work out a home gardening plan to produce vegetables and dairy products as supplies which may be needed and consumed on the grounds are proving very successful.

Important Needs:

The items which were submitted under the head of the budget to be approved by the next Legislature show the urgent need of the

Eastern Branch. I especially emphasize the following very great needs:

1. An adequate teaching force to do the work of the institution as outlined by the course of study proposed in developing the Eastern Branch to a full college. This involves the employment of foremen and teachers to carry the laboratory methods to the farm and shops.
2. The renovation of the buildings for animals and poultry, also a green house to carry on plant propagation for the entire year in order that we may be able to produce early vegetables for the market. It is very necessary that our dairy herds be improved and that equipment, that is very much needed, be placed.
3. Increased facilities for laboratory work, especially during the winter, and for domestic science and art the entire year.
4. A science building with appropriate equipment. A granary for storing wheat, corn and oats.

Respectfully submitted,

T. H. KIAH,
Principal, Eastern Branch.

Financial Department—(College Park)

To the President of the University:

Herewith is submitted a brief report of the financial operations of the departments of the University of Maryland located at College Park, Princess Anne and Ridgely for the biennium ended September 30, 1930.

The receipts for maintenance for the biennium reached a total of \$3,218,239.45. Of this total the State provided \$1,172,569.10, the Federal Government \$507,579.80, students, including summer school, \$781,556.25, the earning departments \$364,178.11 and miscellaneous sources \$392,356.19. There was a balance in the maintenance fund at the beginning of the biennium of \$172,558.52, making the total available for the biennium \$3,390,797.97. The cash disbursements totalled \$3,118,696.99, of which \$1,976,975.05 was expended for salaries and wages, \$762,300.27 for operating expenses, \$135,342.83 for traveling expenses, \$134,629.80 for equipment and other capital outlay, exclusive of buildings, and \$109,449.04 for miscellaneous expenses. There remained in the operating funds at the close of the biennium a balance of \$272,100.98. Outstanding liabilities in the nature of unpaid bills and uncompleted projects will leave an unobligated balance in the maintenance account of \$46,664.37. The maintenance surplus at the close of the last biennium was \$5,421.50. It will therefore be seen that the financial condition of the University at the close of the biennium covered by the report indicates considerable progress.

The building account showed a balance of \$9,339.83 at the beginning of the biennium. Receipts have totalled \$366,929.79, the total amount available being \$376,269.62. Expenditures amounted to \$308,635.64, leaving a balance in the building account of \$67,633.98. In addition, there remained in the State Treasury a balance of \$545,000.00 for purposes specified in Table XIV of the report.

Recommendation was made in the last biennial report for more help and more space for the financial department. No additions to the staff have been made, but several labor-saving machines have been added, chief of which is a bookkeeping machine. Provision is being made for larger offices for the department in the new library building, with increased storage space, also. A statistician will soon be added to the staff and recommendation is made for one additional junior clerk to assist with routine work.

One of the chief hindrances in keeping the work up to date is the increasing demand for financial data from many sources. Within the past biennium many questionnaires have been received, ranging in size from one page to more than six hundred. The work involved in answering them constituted a real burden. It is expected that with the help of the new statistician much more data may be made easily available for this and other purposes.

Records covering the biennium have been audited by Federal auditors to June 30, 1930, and by State auditors to September 30, 1929. They were found correct.

Respectfully submitted,

MAUDE F. McKENNEY,
Financial Secretary.

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MARYLAND—COLLEGE PARK AND SUB-STATIONS
FOR THE BIENNIUM ENDED SEPTEMBER 30, 1930**

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TABLE II

UNIVERSITY OF MARYLAND—COLLEGE PARK
CONSOLIDATED STATEMENT OF RECEIPTS AND DISBURSEMENTS FOR THE BIENNIUM 1928-1930
SHOWING BEGINNING AND CLOSING BALANCES

| | Balance Oct. 1, 1928 | Total Re- ceipts for Biennium | Total Avail- able for Biennium | Total Dis- bursements Biennium | Balance Sept. 30, 1930 |
|--|----------------------------|-------------------------------------|--------------------------------------|--------------------------------------|------------------------------|
| General University—College Park | \$ 137,939.57 | \$2,042,006.95 | \$2,179,946.52 | \$1,976,472.64 | \$ 203,473.88 |
| Eastern Branch—Princess Anne | 7,774.98 | 88,763.48 | 96,538.46 | 86,238.42 | 10,300.04 |
| Experiment Station—College Park | 1,861.18 | 414,094.85 | 412,233.67 | 406,515.15 | 5,718.52 |
| Extension Service—College Park | 32,239.69 | 569,945.17 | 602,184.86 | 549,576.32 | 52,608.54 |
| Public Service and Regulatory—College Park | 3,534.54 | 103,429.00 | 99,894.46 | 99,894.46 | |
| Grand Totals—Biennium 1928-1930 | \$ 172,558.52 | \$3,218,239.45 | \$3,390,797.97 | \$3,118,696.99 | \$ 272,100.98 |
| Total Receipts for Biennium | | | | | \$3,390,797.97 |
| Total Disbursements for Biennium | | | | | 3,118,696.99 |
| | | | | | \$ 272,100.98 |
| Cash Balance September 30, 1930 | | | | | |
| Reconciliation of Cash Balances with Depositories and Cash on Hand: | | | | | |
| Union Trust Company of Maryland | | | \$32,803.28 | | |
| Citizens' National Bank of Laurel | | | 24,924.05 | | |
| Prince George's Bank and Trust Co. | | | 14,318.52 | | |
| Bank of Ridgely | | | 1,000.00 | | |
| Total in Banks | | | | \$ 73,045.85 | |
| Balance in State Treasury | | | | 194,805.74 | |
| Cash on Hand | | | | 3,849.39 | |
| Petty Cash | | | | 400.00 | |
| Total Cash Balance September 30, 1930 | | | | | \$272,100.98 |

TABLE III
UNIVERSITY OF MARYLAND—COLLEGE PARK
RECAPITULATION OF RECEIPTS FOR THE BIENNIUM 1928-1930
SHOWING SOURCES

| | Total Receipts for 1928-30 | — SOURCES OF RECEIPTS | | | | Revolving Funds | Other Sources |
|---|----------------------------------|-----------------------|-------------------|-----------------|--------------|--------------------|------------------|
| | | State Appro. | Federal Appro. | Student Fees | | | |
| <i>Receipts:</i> | | | | | | | |
| General University | \$2,042,006.95 | \$ 579,994.88 | \$ 97,662.29 | \$767,464.52 | \$282,558.64 | \$314,326.62 | |
| Eastern Branch | 88,763.48 | 48,240.00 | 20,000.00 | 14,091.73 | 6,249.62 | 182.13 | |
| Experiment Station | 414,094.85 | 158,900.00 | 172,500.00 | ..... | 75,369.85 | 7,325.00 | |
| Extension Service | 569,945.17 | 294,274.22 | 217,417.51 | ..... | ..... | 58,253.44 | |
| Public Service and Regulatory..... | 103,429.00 | 91,160.00 | ..... | ..... | ..... | 12,269.00 | |
| Total Receipts—1928-1930 | \$3,218,239.45 | \$1,172,569.10 | \$507,579.80 | \$781,556.25 | \$364,178.11 | \$392,356.19 | |
| Cash Balances Oct. 1, 1928..... | 172,558.52 | ..... | 69,241.34 | ..... | 3,238.95 | 100,078.23 | |
| Net Total Available for the Biennium 1928-1930 | \$3,390,797.97 | \$1,172,569.10 | \$576,821.14 | \$781,556.25 | \$367,417.06 | \$492,434.42 | |

TABLE IV
UNIVERSITY OF MARYLAND—COLLEGE PARK
RECAPITULATION OF DISBURSEMENTS FOR THE BIENNIUM 1928-1930
SHOWING MAJOR PURPOSES

| | Total Disbursements Biennium | Salaries and Wages | Operating Expenses | Miscellan- eous Cash Disbursements | Traveling Expense | Capital Outlay |
|---|------------------------------------|--------------------------|-----------------------|--|----------------------|-------------------|
| <i>Disbursements:</i> | | | | | | |
| General University | \$1,976,472.64 | \$1,149,178.57 | \$599,543.77 | \$ 94,680.04 | \$ 22,579.83 | \$110,490.43 |
| Eastern Branch | 86,238.42 | 56,981.13 | 26,038.34 | 100.00 | 225.31 | 2,893.64 |
| Experiment Station | 406,515.15 | 284,292.20 | 93,632.76 | ..... | 12,411.60 | 16,178.59 |
| Extension Service | 549,576.32 | 421,870.86 | 34,966.67 | ..... | 89,968.56 | 2,770.23 |
| Public Service and Regulatory | 99,894.46 | 64,652.29 | 8,118.73 | 14,669.00 | 10,157.53 | 2,296.91 |
| Total Disbursements for the Biennium 1928-1930 | \$3,118,696.99 | \$1,976,975.05 | \$762,300.27 | \$109,449.04 | \$135,342.83 | *\$134,629.80 |

*Does not include new buildings. See separate statement of building funds.

TABLE V
STATEMENT OF RECEIPTS AND DISBURSEMENTS BY FUNDS
FOR THE BIENNIUM 1928-1930
SHOWING BEGINNING AND CLOSING BALANCES

| GENERAL UNIVERSITY— COLLEGE PARK: | Balance October 1, 1928 | Receipts 1928- 1930 | Total Avail- able for Biennium | Total Dis- bursements Biennium | Balance Sept. 30 1930 |
|---|-------------------------------|---------------------------|--------------------------------------|--------------------------------------|-----------------------------|
| Instructional Funds | —\$69,849.68 | \$1,636,710.30 | \$1,566,860.62 | \$1,607,816.84 | —\$40,956.22 |
| <i>Special Funds—</i> | | | | | |
| Federal Smith-Hughes | —1,744.22 | 17,662.29 | 15,918.07 | 17,871.90 | —**1,953.83 |
| Endowment Fund—Class of 1908 | 1,000.00 | | 1,000.00 | 1,000.00 | *** |
| Special Chemistry Equipment | 275.65 | 3,234.00 | 3,509.65 | 3,391.23 | 118.42 |
| Fertilizer Lime and Feed Inspection | | *63,840.00 | 63,840.00 | 63,840.00 | |
| <i>Earning Departments—</i> | | | | | |
| Students Supply Store | 8,556.36 | 92,733.65 | 101,290.01 | ***82,076.59 | 19,213.42 |
| University Press | —3,137.82 | 13,900.63 | 10,762.81 | 13,332.90 | —2,570.09 |
| Dairy Manufacturing Laboratory | 2,557.24 | 175,924.36 | 178,481.60 | 173,910.58 | 4,571.02 |
| University Storehouse | 282.04 | 12,774.88 | 13,056.92 | 13,062.48 | —5.56 |
| Laboratory Alcohol Fund | | 226.84 | 226.84 | 170.12 | 56.72 |
| State Working Fund | 200,000.00 | 25,000.00 | 225,000.00 | | 225,000.00 |
| Net Totals—General University | \$137,939.57 | \$2,042,006.95 | \$2,179,946.52 | \$1,976,472.64 | \$203,473.88 |
| EASTERN BRANCH— Princess Anne | | | | | |
| State Fund | | \$48,240.00 | \$48,240.00 | 48,240.00 | |
| Federal Fund | \$7,500.01 | 20,000.00 | 27,500.01 | 19,688.97 | 7,811.04 |
| General Receipts | 274.97 | 20,523.48 | 20,798.45 | 18,309.45 | 2,489.00 |
| Net Totals—Eastern Branch | \$7,774.98 | \$88,763.48 | \$96,538.46 | \$86,238.42 | \$10,300.04 |
| Forward— | | | | | |

*Balance of receipts in this department used to cover overhead and credited to Industrial Funds.
 **Due from State Department of Education.
 ***Transferred to Savings Account.
 ****\$7,000 was transferred from Students' Supply Store earning to Instructional funds during biennium.

TABLE V

STATEMENT OF RECEIPTS AND DISBURSEMENTS BY FUNDS—Continued
FOR THE BIENNIUM 1928-1930
SHOWING BEGINNING AND CLOSING BALANCES

| EXPERIMENT STATION— College Park: | Balance October 1, 1928 | Receipts 1928- 1930 | Total Avail- able for Biennium | Total Dis- bursements Biennium | Balance Sept. 30 1930 |
|---|-------------------------------|---------------------------|--------------------------------------|--------------------------------------|-----------------------------|
| State Fund for Research | | \$135,900.00 | \$135,900.00 | \$135,900.00 | |
| Biological Laboratory | —\$2,663.05 | 26,345.25 | 23,682.20 | 21,520.16 | 2,162.04 |
| Ridgely Farm | 42.04 | 11,327.73 | 11,369.77 | 10,650.06 | 719.71 |
| Hatch Fund | —36.70 | 30,000.00 | 29,963.30 | 29,645.91 | 317.39 |
| Adams Fund | —68.35 | 30,000.00 | 29,931.65 | 29,931.65 | |
| Purnell Fund | 932.81 | 112,500.00 | 113,432.81 | 111,195.41 | 2,237.40 |
| Station Farm Fund | | 60,696.87 | 58,570.42 | 60,106.36 | —1,535.94 |
| Fellowship Fund: | —2,126.45 | | | | |
| Synthetic Nitrogen Fund | | | | | |
| N. V. Potash Export Fund | 2,058.52 | 7,325.00 | 9,383.52 | 7,565.60 | 1,817.92 |
| Rural Electric Project | | | | | |
| McCormick Fellowship | | | | | |
| Net Totals—Experiment Station | —\$1,861.18 | \$414,094.85 | \$412,233.67 | \$406,515.15 | \$5,718.52 |
| AGRICULTURE AND HOME ECONOMICS EXTENSION— College Park: | | | | | |
| State Smith Lever | | \$92,574.22 | \$92,574.22 | \$92,574.22 | |
| County Demonstration | | 120,000.00 | 120,000.00 | 120,000.00 | |
| General Extension | \$1,572.21 | 70,529.73 | 72,101.94 | 69,198.59 | 2,903.35 |
| Marketing Extension | | 22,000.00 | 22,000.00 | 22,000.00 | |
| Canning Extension | | 20,000.00 | 20,000.00 | 20,000.00 | |
| Poultry Extension | | 3,000.00 | 3,000.00 | 3,000.00 | |
| Dairy Extension | | 1,500.00 | 1,500.00 | 1,500.00 | |
| Federal Smith Lever | 19,354.26 | 112,574.22 | 131,928.48 | 113,277.93 | 18,650.55 |
| Fed. Smith-Lever Supplementary | 3,937.08 | 35,562.76 | 39,499.84 | 31,376.97 | 8,122.87 |
| Capper-Ketcham | 8,102.52 | 48,440.53 | 56,543.05 | 50,396.86 | 6,146.19 |
| Additional Federal Cooperative Fund | | 17,000.00 | 17,000.00 | 961.63 | 16,038.37 |
| Advanced Registry Testing | —246.38 | 18,723.71 | 18,477.33 | 17,250.12 | 1,227.21 |
| Sub-Total—Agrl. and Home Econ. Extension | \$32,719.69 | \$561,905.17 | \$594,624.86 | \$541,536.32 | \$53,088.54 |

TABLE V
STATEMENT OF RECEIPTS AND DISBURSEMENTS BY FUNDS—Continued
FOR THE BIENNIUM 1928-1930
SHOWING BEGINNING AND CLOSING BALANCES

| Forward— | Balance October 1, 1928 | Receipts 1928- 1930 | Total Avail- able for Biennium | Total Dis- bursements Biennium | Balance Sept. 30 1930 |
|---|-------------------------------|---------------------------|--------------------------------------|--------------------------------------|-----------------------------|
| <i>Mining Extension—</i> | | | | | |
| State Appropriation | —\$480.00 | \$4,200.00 | \$4,200.00 | \$4,200.00 | —\$480.00 |
| Federal Smith-Hughes Appro. | | 3,840.00 | 3,860.00 | 3,840.00 | |
| Sub-Total—Mining Extension | —\$480.00 | \$8,040.00 | \$7,560.00 | \$8,040.00 | —\$480.00 |
| Net Total—Extension Service | \$32,239.69 | \$569,945.17 | \$602,184.86 | \$549,576.32 | \$52,608.54 |
| PUBLIC SERVICE AND REGULATORY WORK— | | | | | |
| College Park: | | | | | |
| Seed Inspection | | \$19,700.00 | \$19,700.00 | \$19,700.00 | |
| State Dairymen's Association | | 10,000.00 | 10,000.00 | 10,000.00 | |
| State Horticultural Dept. | | 26,460.00 | 26,460.00 | 26,460.00 | |
| Insect Control | —\$3,534.54 | 47,269.00 | 43,734.46 | 43,734.46 | |
| Net Total—Public Service and Regu- latory | —\$3,534.54 | \$103,429.00 | \$99,894.46 | \$99,894.46 | |
| Grand Totals—All Funds Handled through College Park Office | \$172,558.52 | \$3,218,239.45 | \$3,330,797.97 | \$3,118,696.99 | \$272,100.98 |

TABLE VI
DETAIL OF RECEIPTS FOR THE BIENNIUM 1928-1930

GENERAL UNIVERSITY—

College Park:

From State Treasurer:

| | | | | | | | | |
|------------------------|----------|---------------|--------------------------|--------------|----------------|--------------|-----------------|---------------|
| For Maintenance | 1st year | \$ 266,000.00 | Total Receipts 1928-1930 | State Appro. | Federal Appro. | Student Fees | Revolving Funds | Other Sources |
| For Maintenance | 2nd year | 309,900.00 | | 309,900.00 | | | | |
| Deficiency in Interest | 1st year | 2,047.44 | | 2,047.44 | | | | |
| Deficiency in Interest | 2nd year | 2,047.44 | | 2,047.44 | | | | |

From U. S. Treasurer:

| | | | | | | | | |
|----------------|----------|-----------|--|--------------|--|--|--|--|
| Morrill-Nelson | 1st year | 40,000.00 | | \$ 40,000.00 | | | | |
| Morrill-Nelson | 2nd year | 40,000.00 | | 40,000.00 | | | | |
| Smith-Hughes | 1st year | 9,201.26 | | 9,201.26 | | | | |
| Smith-Hughes | 2nd year | 8,461.03 | | 8,461.03 | | | | |

From Students (Including Summer School):

| | | | |
|----------|------------|--------------|--|
| 1st year | 376,299.35 | \$376,299.35 | |
| 2nd year | 391,165.17 | 391,165.17 | |

From Earning Depts.:

| | | | |
|--------------------------|----------|-----------|--------------|
| Students' Supply Store | 1st year | 47,087.75 | \$ 47,087.75 |
| Students' Supply Store | 2nd year | 45,645.90 | 45,645.90 |
| University Press | 1st year | 7,383.84 | 7,383.84 |
| University Press | 2nd year | 6,516.79 | 6,516.79 |
| Dairy Manufacturing Lab. | 1st year | 91,786.98 | 91,786.98 |
| Dairy Manufacturing Lab. | 2nd year | 84,137.38 | 84,137.38 |

TABLE VI
DETAILS OF RECEIPTS FOR THE BIENNIUM 1928-1930—Continued

| | Total Receipts 1928-1930 | State Appro. | Federal Appro. | Student Fees | Revolving Funds | Other Sources |
|---|--------------------------------|-----------------|-------------------|-----------------|--------------------|------------------|
| <i>Forward—</i> | | | | | | |
| <i>From Miscellaneous Sources:</i> | | | | | | |
| Fertilizer, Lime and Feed Licenses and Tonnage Fees.....1st year | \$54,170.01 | ..... | ..... | ..... | ..... | \$ 54,170.01 |
| Fertilizer, Lime and Feed Licenses and Tonnage Fees.....2nd year | 55,082.96 | ..... | ..... | ..... | ..... | 55,082.96 |
| Sales, Greenhouse and Gardens, Dining Hall Meals, and Miscellaneous.....1st year | 15,289.34 | ..... | ..... | ..... | ..... | 15,289.34 |
| Sales, Greenhouse and Gardens, Dining Hall Meals, and Miscellaneous.....2nd year | 15,253.19 | ..... | ..... | ..... | ..... | 15,253.19 |
| <i>Reimbursements for Service:</i> | | | | | | |
| Baltimore Schools, State Roads Commission, etc.....1st year | 30,144.54 | ..... | ..... | ..... | ..... | 30,144.54 |
| Baltimore Schools, State Roads Commission, etc.....2nd year | 35,983.75 | ..... | ..... | ..... | ..... | 35,983.75 |
| Reimbursements, Miscellane- ous Extension Service for Overhead, Laundry, etc.....1st year | \$ 7,422.89 | ..... | ..... | ..... | ..... | 7,422.89 |
| Reimbursements, Miscellane- ous Extension Service for Overhead, Laundry, etc.....2nd year | 6,649.73 | ..... | ..... | ..... | ..... | 6,649.73 |
| Fellowship Fund .....1st year | 500.00 | ..... | ..... | ..... | ..... | 500.00 |
| Fellowship Fund .....2nd year | 1,000.00 | ..... | ..... | ..... | ..... | 1,000.00 |
| Interest on Invested Funds.....1st year | 4,083.63 | ..... | ..... | ..... | ..... | 4,083.63 |
| Interest on Invested Funds.....2nd year | 4,673.74 | ..... | ..... | ..... | ..... | 4,673.74 |

TABLE VI
DETAILS OF RECEIPTS FOR THE BIENNIUM 1928-1930—Continued

| | Total Receipts 1928-1930 | State Appro. | Federal Appro. | Student Fees | Revolving Funds | Other Sources |
|--|--------------------------------|-----------------|-------------------|-----------------|--------------------|------------------|
| Forward— | | | | | | |
| <i>Refunds and Rebates:</i> | | | | | | |
| Uniforms, Insurance, etc. 1st year | \$6,986.96 | ..... | ..... | ..... | ..... | \$6,986.96 |
| Uniforms, Insurance, etc. 2nd year | 1,263.94 | ..... | ..... | ..... | ..... | 1,263.94 |
| Group Insurance 1st year | 7,146.11 | ..... | ..... | ..... | ..... | 7,146.11 |
| Group Insurance 2nd year | 11,479.40 | ..... | ..... | ..... | ..... | 11,479.40 |
| <i>Miscellaneous Credits:</i> | | | | | | |
| Fees for Cashing Checks, Interest on Deposits, etc. 1st year | 1,596.09 | ..... | ..... | ..... | ..... | 1,596.09 |
| Fees for Cashing Checks, Interest on Deposits, etc. 2nd year | 1,706.74 | ..... | ..... | ..... | ..... | 1,706.74 |
| <i>Special Chemistry Equipment:</i> | | | | | | |
| Donations 1st year | 3,034.00 | ..... | ..... | ..... | ..... | 3,034.00 |
| Donations 2nd year | 200.00 | ..... | ..... | ..... | ..... | 200.00 |
| From Carnegie Corporation For Library Survey 2nd year | 500.00 | ..... | ..... | ..... | ..... | 500.00 |
| <i>University Storehouse:</i> | | | | | | |
| Department Transfers 1st year | 7,716.98 | ..... | ..... | ..... | ..... | 7,716.98 |
| Department Transfers 2nd year | 5,057.90 | ..... | ..... | ..... | ..... | 5,057.90 |
| <i>Credits to General Service:</i> | | | | | | |
| Addition to State Working Fund. 1st year | 6,890.46 | ..... | ..... | ..... | ..... | 6,890.46 |
| | 5,494.26 | ..... | ..... | ..... | ..... | 5,494.26 |
| | 25,000.00 | ..... | ..... | ..... | ..... | 25,000.00 |
| Total Receipts 1st year | \$1,009,787.63 | \$ 268,047.44 | \$ 49,201.26 | \$376,299.35 | \$146,258.57 | \$169,981.01 |
| Total Receipts 2nd year | 1,032,219.32 | 311,947.44 | 48,461.03 | 391,165.17 | 136,300.07 | 144,345.61 |
| <hr/> | | | | | | |
| Grand Total—General University Receipts for Biennium | \$2,042,006.95 | \$ 579,994.88 | \$ 97,662.29 | \$767,464.52 | \$282,558.64 | \$314,326.62 |

TABLE VI
DETAILS OF RECEIPTS FOR THE BIENNIUM 1928-1930—Continued

| | Total Receipts 1928-1930 | State Appro. | Federal Appro. | Student Fees | Revolving Funds | Other Sources |
|---|--------------------------------|-----------------|-------------------|-----------------|--------------------|------------------|
| Forward General University..... | \$2,042,006.95 | \$ 579,994.88 | \$ 97,662.29 | \$767,464.52 | \$282,558.64 | \$314,326.62 |
| EASTERN BRANCH—Princess Anne: | | | | | | |
| State Appro. for Maintenance.....1st year | 23,120.00 | 23,120.00 | | | | |
| State Appro. for Maintenance.....2nd year | 25,120.00 | 25,120.00 | | | | |
| Morrill-Nelson Fund.....1st year | 10,000.00 | | 10,000.00 | | | |
| Morrill-Nelson Fund.....2nd year | 10,000.00 | | 10,000.00 | | | |
| Student Fees.....1st year | 6,188.29 | | | 6,188.29 | | |
| Student Fees.....2nd year | 7,903.44 | | | 7,903.44 | | |
| Sales from Farm and Shops.....1st year | 3,413.55 | | | | 3,413.55 | |
| Sales from Farm and Shops.....2nd year | 2,836.07 | | | | 2,836.07 | |
| Interest on Deposits.....1st year | 46.66 | | | | | 46.66 |
| Interest on Deposits.....2nd year | 135.47 | | | | | 135.47 |
| Totals.....1st year | \$ 42,768.50 | \$ 23,120.00 | \$ 10,000.00 | \$ 6,188.29 | \$ 3,413.55 | \$ 46.66 |
| Totals.....2nd year | 45,994.98 | 25,120.00 | 10,000.00 | 7,903.44 | 2,836.07 | 135.47 |
| Totals Eastern Branch Receipts | \$ 88,763.48 | \$ 48,240.00 | \$ 20,000.00 | \$ 14,091.73 | \$ 6,249.62 | \$ 182.13 |

TABLE VI
DETAILS OF RECEIPTS FOR THE BIENNIUM 1928-1930—Continued

| Forward— | | | | | | |
|------------------------------------|----------|--------------------------------|-----------------|-------------------|-----------------|--------------------|
| EXPERIMENT STATION— | | | | | | |
| College Park: | | | | | | |
| | | Total Receipts 1928-1930 | State Appro. | Federal Appro. | Student Fees | Revolving Funds |
| State Fund for Research | 1st year | \$ 66,900.00 | \$ 66,900.00 | | | |
| State Fund for Research | 2nd year | 69,000.00 | 69,000.00 | | | |
| Biological Laboratory | 1st year | 14,308.07 | 5,500.00 | | | \$ 8,808.07 |
| Biological Laboratory | 2nd year | 12,037.18 | 7,500.00 | | | 4,537.18 |
| Ridgely Farm | 1st year | 5,761.24 | 5,000.00 | | | 761.24 |
| Ridgely Farm | 2nd year | 5,566.49 | 5,000.00 | | | 566.49 |
| Hatch Fund | 1st year | 15,000.00 | | \$ 15,000.00 | | |
| Hatch Fund | 2nd year | 15,000.00 | | 15,000.00 | | |
| Adams Fund | 1st year | 15,000.00 | | 15,000.00 | | |
| Adams Fund | 2nd year | 15,000.00 | | 15,000.00 | | |
| Purnell Fund | 1st year | 52,500.00 | | 52,500.00 | | |
| Purnell Fund | 2nd year | 60,000.00 | | 60,000.00 | | |
| Station Farm Fund | 1st year | 32,924.88 | | | | 32,924.88 |
| Station Farm Fund | 2nd year | 27,771.99 | | | | 27,771.99 |
| Fellowship Funds | 1st year | 3,950.00 | | | | \$ 3,950.00 |
| Fellowship Funds | 2nd year | 3,375.00 | | | | 3,375.00 |
| Totals | 1st year | \$ 206,344.19 | \$ 77,400.00 | \$ 82,500.00 | | \$ 42,494.19 |
| Totals | 2nd year | 207,750.66 | 81,500.00 | 90,000.00 | | 32,875.66 |
| Totals Experiment Station Receipts | | \$ 414,094.85 | \$ 158,900.00 | \$ 172,500.00 | | \$ 75,369.85 |
| | | | | | | \$ 7,325.00 |

TABLE VI

DETAILS OF RECEIPTS FOR THE BIENNIUM 1928-1930—Continued

Forward—

EXTENSION SERVICE—

College Park:

| | | Total Receipts 1928-1930 | State Appro. | Federal Appro. | Student Fees | Revolving Funds | Other Sources |
|--|----------|--------------------------------|-----------------|-------------------|-----------------|--------------------|------------------|
| State Smith-Lever | 1st year | \$ 46,287.11 | \$ 46,287.11 | | | | |
| State Smith-Lever | 2nd year | 46,287.11 | 46,287.11 | | | | |
| County Demonstration | 1st year | 60,000.00 | 60,000.00 | | | | |
| County Demonstration | 2nd year | 60,000.00 | 60,000.00 | | | | |
| General Extension | 1st year | 36,538.92 | 15,000.00 | | | | \$ 21,538.92 |
| General Extension | 2nd year | 34,590.81 | 16,000.00 | | | | 18,590.81 |
| Marketing Extension | 1st year | 10,000.00 | 10,000.00 | | | | |
| Marketing Extension | 2nd year | 12,000.00 | 12,000.00 | | | | |
| Canning Extension | 1st year | 10,000.00 | 10,000.00 | | | | |
| Canning Extension | 2nd year | 10,000.00 | 10,000.00 | | | | |
| Poultry Extension | 1st year | | | | | | |
| Poultry Extension | 2nd year | 3,000.00 | 3,000.00 | | | | |
| Dairy Extension | 1st year | | | | | | |
| Dairy Extension | 2nd year | 1,500.00 | 1,500.00 | | | | |
| Federal Smith-Lever | 1st year | 56,287.11 | | \$ 56,287.11 | | | |
| Federal Smith-Lever | 2nd year | 56,287.11 | | 56,287.11 | | | |
| Federal Smith-Lever Supply | 1st year | 17,781.38 | | 17,781.38 | | | |
| Federal Smith-Lever Supply | 2nd year | 17,781.38 | | 17,781.38 | | | |
| Capper-Ketcham | 1st year | 22,813.51 | | 22,813.51 | | | |
| Capper-Ketcham | 2nd year | 25,627.02 | | 25,627.02 | | | |
| Additional Federal Coop. Fund | 1st year | | | | | | |
| Additional Federal Coop. Fund | 2nd year | 17,000.00 | | 17,000.00 | | | |
| Advanced Registry Testing | 1st year | 9,578.03 | | | | | \$ 9,578.03 |
| Advanced Registry Testing | 2nd year | 8,545.68 | | | | | 8,545.68 |
| Totals | 1st year | \$ 269,286.06 | \$ 141,287.11 | \$ 96,882.00 | | | \$ 31,116.95 |
| Totals | 2nd year | 292,619.11 | 148,787.11 | 116,695.51 | | | 27,136.49 |
| Total Agriculture and Home Economics Extension Receipts | | \$ 561,905.17 | \$ 290,074.22 | \$ 213,577.51 | | | \$ 58,253.44 |

TABLE VI
DETAILS OF RECEIPTS FOR THE BIENNIUM 1928-1930—Continued

| Forward— | | | | | | |
|--|----------|--------------------------------|-----------------|-------------------|-----------------|--------------------|
| EXTENSION SERVICE— | | | | | | |
| College Park: | | | | | | |
| <i>Continued—</i> | | | | | | |
| Mining Extension: | | Total Receipts 1928-1930 | State Appro. | Federal Appro. | Student Fees | Revolving Funds |
| | | | | | | Other Sources |
| State Appropriation | 1st year | \$ 2,100.00 | 2,100.00 | | | |
| State Appropriation | 2nd year | 2,100.00 | 2,100.00 | | | |
| Federal Smith-Hughes | 1st year | 1,920.00 | | \$ 1,920.00 | | |
| Federal Smith-Hughes | 2nd year | 1,920.00 | | 1,920.00 | | |
| Totals | 1st year | \$ 4,020.00 | 2,100.00 | \$ 1,920.00 | | |
| Totals | 2nd year | 4,020.00 | 2,100.00 | 1,920.00 | | |
| Totals Mining Extension | | \$ 8,040.00 | 4,200.00 | \$ 3,840.00 | | |
| Totals | 1st year | \$ 273,306.06 | \$ 143,387.11 | \$ 98,802.00 | | \$ 31,116.95 |
| Totals | 2nd year | 296,639.11 | 150,887.11 | 118,615.51 | | 27,136.49 |
| Totals Extension Service Receipts | | \$ 569,945.17 | \$ 294,274.22 | \$ 217,417.51 | | \$ 58,253.44 |
| <i>Public Service and Regulatory Work:</i> | | | | | | |
| Seed Inspection | 1st year | \$ 9,700.00 | 9,700.00 | | | |
| Seed Inspection | 2nd year | 10,000.00 | 10,000.00 | | | |
| State Dairymen's Assn. | 1st year | 5,000.00 | 5,000.00 | | | |
| State Dairymen's Assn. | 2nd year | 5,000.00 | 5,000.00 | | | |
| State Horticulture | 1st year | 12,560.00 | 12,560.00 | | | |
| State Horticulture | 2nd year | 13,900.00 | 13,900.00 | | | |
| Insect Control | 1st year | 22,269.00 | 10,000.00 | | Loan | \$ 12,269.00 |
| Insect Control | 2nd year | 25,000.00 | 25,000.00 | | | |
| Totals | 1st year | \$ 49,529.00 | \$ 37,260.00 | | | \$ 12,269.00 |
| Totals | 2nd year | 53,900.00 | 53,900.00 | | | |
| Totals—Public Service and Regulatory Receipts | | \$ 103,429.00 | \$ 91,160.00 | | | \$ 12,269.00 |

TABLE VI
DETAILS OF RECEIPTS FOR THE BIENNIUM 1928-1930—*Continued*

| Forward— | | | | | | | |
|---|--------------------------------|-----------------|-------------------|-----------------|--------------------|------------------|--|
| <i>Grand Summary of Receipts:</i> | | | | | | | |
| | Total Receipts 1928-1930 | State Appro. | Federal Appro. | Student Fees | Revolving Funds | Other Sources | |
| General University | 1928-29 | \$ 1,009,787.63 | \$ 49,201.26 | \$376,299.35 | \$146,258.57 | \$169,981.01 | |
| General University | 1929-30 | 1,032,219.32 | 48,461.03 | 391,165.17 | 136,300.07 | 144,345.61 | |
| Eastern Branch | 1928-29 | 42,768.50 | 10,000.00 | 6,188.29 | 3,413.55 | 46.66 | |
| Eastern Branch | 1929-30 | 45,994.98 | 10,000.00 | 7,903.44 | 2,836.07 | 135.47 | |
| Experiment Station | 1928-29 | 206,344.19 | 82,500.00 | ..... | 42,494.19 | 3,950.00 | |
| Experiment Station | 1929-30 | 207,750.66 | 90,000.00 | ..... | 32,875.66 | 3,375.00 | |
| Extension Service | 1928-29 | 273,306.06 | 98,802.00 | ..... | ..... | 31,116.95 | |
| Extension Service | 1929-30 | 296,639.11 | 118,615.51 | ..... | ..... | 27,136.49 | |
| Public Service and Regulatory | 1928-29 | 49,529.00 | ..... | ..... | ..... | 12,269.00 | |
| Public Service and Regulatory | 1929-30 | 53,900.00 | ..... | ..... | ..... | ..... |  |
| <hr/> | | | | | | | |
| Grand Total of Receipts for the Biennium 1928-1930 | \$3,218,239.45 | \$1,172,569.10 | \$507,579.80 | \$781,556.25 | \$364,178.11 | \$392,356.19 | |

TABLE VII

DETAIL OF DISBURSEMENTS FOR THE BIENNIIUM 1928-1930

| DEPARTMENT | Total for the Biennium | For Salaries and Wages | For Misc. & Operating Expenses | For Traveling Expenses | FOR CAPITAL OUTLAY Equip. & Misc. Capital Expenses | Library Books |
|--|------------------------------|---------------------------------|--------------------------------------|------------------------------|---|------------------|
| GENERAL UNIVERSITY—College Park: | | | | | | |
| Administrative Offices..... 1st year | \$39,902.05 | \$33,091.14 | \$1,620.39 | \$4,207.03 | \$958.36 | \$25.13 |
| Administrative Offices..... 2nd year | 44,124.97 | 38,022.13 | 2,100.37 | 3,372.88 | 620.39 | 9.20 |
| Registrar's Office..... 1st year | 8,889.00 | 7,539.90 | 947.12 | 200.00 | 192.23 | 9.75 |
| Registrar's Office..... 2nd year | 9,078.95 | 7,889.98 | 780.13 | 101.37 | 287.22 | 20.25 |
| Dean of Women..... 1st year | 3,480.16 | 3,352.95 | 61.04 | 64.05 | 2.12 | |
| Dean of Women..... 2nd year | 3,880.62 | 3,402.72 | 147.94 | 238.10 | 86.11 | 5.75 |
| The Library..... 1st year | 14,944.54 | 8,069.67 | 226.89 | | 393.54 | 6,254.44 |
| The Library..... 2nd year | 20,478.71 | 8,578.00 | 743.27 | 126.90 | 6.00 | 11,024.54 |
| Sub-Total | \$144,779.00 | \$109,946.49 | \$6,627.15 | \$8,310.33 | \$2,543.85 | \$17,351.18 |
| <i>Resident Instruction—</i> | | | | | | |
| College of Agriculture..... 1st year | \$87,762.01 | \$78,448.30 | \$5,701.23 | \$761.28 | \$2,481.30 | \$369.90 |
| College of Agriculture..... 2nd year | 93,039.20 | 80,498.48 | 6,387.40 | 882.30 | 4,892.48 | 378.54 |
| College of Arts and Sciences..... 1st year | 130,428.49 | 112,540.35 | 8,965.87 | 746.10 | 7,974.33 | 201.84 |
| College of Arts and Sciences..... 2nd year | 144,237.43 | 130,902.51 | 9,903.87 | 577.97 | 2,711.86 | 141.22 |
| College of Arts & Sciences, Balto. 1st yr. | 27,795.83 | 27,795.83 | | | | |
| College of Arts & Sciences, Balto. 2nd yr. | 30,755.15 | 30,666.66 | | 88.49 | | |
| College of Education..... 1st year | 35,559.00 | 33,554.30 | 906.89 | 732.88 | 359.55 | 5.38 |
| College of Education..... 2nd year | 38,916.87 | 36,888.11 | 1,088.47 | 846.93 | 74.67 | 18.69 |
| College of Engineering..... 1st year | 42,748.75 | 39,772.36 | 939.62 | 201.86 | 1,489.68 | 345.23 |
| College of Engineering..... 2nd year | 47,675.06 | 42,779.86 | 1,189.27 | 883.16 | 2,409.97 | 412.80 |
| College of Home Economics..... 1st year | 12,297.85 | 10,792.13 | 1,071.89 | 87.13 | 253.53 | 93.17 |
| College of Home Economics..... 2nd year | 15,593.90 | 13,604.52 | 948.44 | 226.55 | 733.75 | 80.64 |
| Military Science and Tactics..... 1st year | 6,381.63 | 4,072.62 | 2,177.07 | | 126.44 | 5.50 |
| Military Science and Tactics..... 2nd year | 5,762.70 | 4,058.41 | 1,681.14 | | 15.37 | 7.78 |
| Physical Education..... 1st year | 7,896.26 | 7,683.78 | 105.48 | 104.74 | 2.26 | |
| Physical Education..... 2nd year | 11,301.00 | 8,913.88 | 320.29 | 134.31 | 1,932.52 | |
| Department of Health..... 1st year | 6,296.35 | 5,536.57 | 519.22 | | 220.36 | |
| Department of Health..... 2nd year | 6,557.34 | 5,984.67 | 507.53 | | 65.14 | |
| Graduate School..... 1st year | 8,890.12 | 8,179.78 | 236.15 | 66.22 | 324.18 | 83.79 |
| Graduate School..... 2nd year | 10,408.46 | 9,493.79 | 56.27 | 2.07 | 638.33 | 218.00 |
| Summer School..... 1st year | 13,123.96 | 12,125.00 | 973.33 | 19.98 | 5.65 | |
| Summer School..... 2nd year | 14,131.81 | 12,753.00 | 1,270.62 | 76.90 | 16.22 | 15.67 |
| Sub-Total | \$797,559.17 | \$717,064.91 | \$44,949.45 | \$6,438.87 | \$26,727.79 | \$2,378.15 |

TABLE VII
DETAIL OF DISBURSEMENTS FOR THE BIENNIUM 1928-1930—Continued

| DEPARTMENT | Total for the Biennium | For Salaries and Wages | For Misc. & Operating Expenses | For Traveling Expenses | FOR CAPITAL OUTLAY Equip. & Misc. Capital Expenses | Library Books |
|---|------------------------------|------------------------------|--------------------------------------|------------------------------|---|------------------|
| GENERAL UNIVERSITY—Continued— | | | | | | |
| <i>Service and Miscellaneous—</i> | | | | | | |
| General Service Depts. 1st year | \$111,285.17 | \$49,012.33 | \$60,662.16 | \$32.36 | \$1,578.32 | |
| General Service Depts. 2nd year | 118,648.27 | 50,867.16 | 54,133.93 | 14.71 | 13,626.53 | \$5.94 |
| Purchasing, Mail and Transportation 1st year | 11,753.77 | 9,914.17 | 1,665.17 | 56.37 | 118.06 | |
| Purchasing, Mail and Transportation 2nd year | 12,551.87 | 10,048.50 | 1,503.06 | 82.31 | 918.00 | |
| Bureau of Information 1st year | 9,061.92 | 3,642.27 | 5,061.84 | | 3.00 | 354.81 |
| Bureau of Information 2nd year | 12,188.28 | 3,984.17 | 8,201.63 | | | 2.48 |
| General Equipment 1st year | 1,151.72 | | | | 1,151.72 | |
| General Equipment 2nd year | 3,878.94 | | 264.41 | | 3,614.53 | |
| Campus Maintenance 1st year | 9,434.56 | 4,722.27 | 3,744.43 | 69.50 | 898.36 | |
| Campus Maintenance 2nd year | 10,934.52 | 5,566.15 | 2,011.28 | 126.56 | 3,230.53 | |
| Campus Lighting 1st year | 3,294.06 | | 131.83 | | 3,162.23 | |
| Campus Lighting 2nd year | 2,696.63 | 11.30 | 44.26 | | 2,641.07 | |
| Campus Improvement 1st year | 1,746.54 | 1,005.28 | 309.02 | | 432.24 | |
| Water and Sewer Lines 1st year | 2,250.00 | | | | 2,250.00 | |
| Chemistry Equipment 1st year | 2,058.70 | | | | 2,058.70 | |
| Chemistry Equipment 2nd year | 400.00 | | | | 400.00 | |
| Special Improvements 1st year | 11,618.10 | | 6,155.30 | | 5,462.80 | |
| Special Improvements 2nd year | 12,426.85 | 367.35 | | | 12,059.50 | |
| General Overhead— | | | | | | |
| Insurance, etc. 1st year | 18,481.11 | | 17,722.67 | 751.69 | 6.75 | |
| General Overhead— | | | | | | |
| Insurance, etc. 2nd year | 20,778.60 | 57.75 | 19,823.55 | 897.30 | | |
| Misc. General Expenses 1st year | 6,144.19 | 3,460.00 | 2,528.18 | 156.01 | | |
| Misc. General Expenses 2nd year | 2,957.00 | 970.00 | 1,987.00 | | | |
| Sub-Total | \$385,740.80 | \$143,628.70 | \$185,949.72 | \$2,186.81 | \$53,612.34 | \$363.23 |

TABLE VII
DETAIL OF DISBURSEMENTS FOR THE BIENNIUM 1928-1930—Continued

| DEPARTMENT | Total for the Biennium | For Salaries and Wages | For Misc. & Operating Expenses | For Traveling Expenses | FOR CAPITAL OUTLAY Equip. & Misc. Capital Expenses | Library Books |
|--|------------------------------|------------------------------|--------------------------------------|------------------------------|---|------------------|
| GENERAL UNIVERSITY—Continued— | | | | | | |
| <i>Supplementary Operations—</i> | | | | | | |
| The Dining Hall.....1st year | \$110,203.64 | \$29,994.04 | \$77,884.41 | ..... | \$2,314.68 | \$10.51 |
| The Dining Hall.....2nd year | 97,549.05 | 31,182.34 | 65,388.92 | \$170.42 | 807.37 | ..... |
| The Laundry.....1st year | 4,832.76 | 4,529.80 | 284.89 | ..... | 18.07 | ..... |
| The Laundry.....2nd year | 5,717.68 | 4,650.74 | 1,056.18 | ..... | 10.76 | ..... |
| The Dormitories.....1st year | *4,780.65 | 3,583.46 | 259.27 | 9.44 | 928.48 | ..... |
| The Dormitories.....2nd year | *4,666.88 | 3,656.64 | 336.14 | ..... | 674.10 | ..... |
| Sub-Total | \$227,750.66 | \$77,597.02 | \$145,209.81 | \$179.86 | \$4,753.46 | \$10.51 |
| <i>Earning Departments—</i> | | | | | | |
| The Students Supply Store.....1st year | \$36,414.50 | \$4,868.00 | \$31,546.50 | ..... | ..... | ..... |
| The Students Supply Store.....2nd year | 38,662.09 | 4,939.00 | 33,687.75 | \$35.34 | ..... | ..... |
| The University Press.....1st year | 7,542.49 | 3,900.00 | 3,642.49 | ..... | ..... | ..... |
| The University Press.....2nd year | 5,790.41 | 3,725.00 | 2,065.41 | ..... | ..... | ..... |
| Dairy Manfg. Laboratory.....1st year | 89,949.53 | 17,411.83 | 71,792.39 | \$43.25 | \$702.06 | ..... |
| Dairy Manfg. Laboratory.....2nd year | 83,761.05 | 17,333.22 | 65,724.34 | 150.52 | 552.97 | ..... |
| Sub-Total | \$262,120.07 | \$52,177.05 | \$208,458.88 | \$229.11 | \$1,255.03 | ..... |
| State Inspection Laboratory.....1st year | 30,327.52 | 22,600.00 | 4,018.85 | 2,640.16 | 1,036.01 | \$32.50 |
| State Inspection Laboratory.....2nd year | 33,512.48 | 26,164.40 | 4,329.91 | 2,594.69 | 400.46 | 23.02 |
| Sub-Total | \$63,840.00 | \$48,764.40 | \$8,348.76 | \$5,234.85 | \$1,436.47 | \$55.52 |

•Overhead Expenses carried in Service Section.

TABLE VII

DETAIL OF DISBURSEMENTS FOR THE BIENNIUM 1928-1930—Continued

| DEPARTMENT | Total for the Biennium | For Salaries and Wages | For Misc. & Operating Expenses | For Traveling Expenses | FOR CAPITAL OUTLAY Equip. & Misc. Capital Expenses | Library Books |
|--|------------------------------|------------------------------|--------------------------------------|------------------------------|---|------------------|
| Forward | \$1,881,789.70 | \$1,149,178.57 | \$599,543.77 | \$ 22,579.83 | \$ 90,328.94 | \$ 20,158.59 |
| GENERAL UNIVERSITY—Continued— | | | | | | |
| <i>Miscellaneous Disbursements:</i> | | | | | | |
| University Storehouse | | | | | | |
| 1st year | \$8,060.46 | | \$8,060.46 | | | |
| 2nd year | 5,002.02 | | 5,002.02 | | | |
| University Storehouse | | | | | | |
| 1st year | 12,124.76 | | 12,124.76 | | | |
| Student Refunds | | | | | | |
| 1st year | 12,862.79 | | 12,862.79 | | | |
| 2nd year | 170.12 | | 167.22 | | \$2.90 | |
| Laboratory Alcohol Fund | | | | | | |
| <i>Transfers of Fees Collected</i> | | | | | | |
| <i>For Non-Official Activities:</i> | | | | | | |
| Athletic Fees | | | | | | |
| 1st year | 17,333.98 | | 17,333.98 | | | |
| 2nd year | 18,613.72 | | 18,613.72 | | | |
| Athletic Fees | | | | | | |
| 1st year | 12,500.00 | | 12,500.00 | | | |
| 2nd year | 5,000.00 | | 5,000.00 | | | |
| Special \$10.00 fees | | | | | | |
| 1st year | 2,550.00 | | 2,550.00 | | | |
| 2nd year | 465.09 | | 465.09 | | | |
| Student Activities fees | | | | | | |
| 1st year | \$94,682.94 | | \$94,680.04 | | \$2.90 | |
| 2nd year | \$958,796.13 | | \$351,930.79 | | \$36,903.09 | \$7,794.07 |
| Transfers of College Funds | | | | | | |
| to other departments | 1,017,676.51 | | 342,293.02 | | 53,428.75 | 12,364.52 |
| Transfers of College Funds | | | | | | |
| to other departments | | | | | | |
| 1st year | | \$551,218.13 | | | | |
| 2nd year | | 597,960.44 | | | | |
| Sub-Total | | | | | | |
| Grand Totals | | | | | | |
| 1st year | | \$551,218.13 | | | | |
| 2nd year | | 597,960.44 | | | | |
| Total General University Expenditures for the Biennium 1928-1930 | \$1,976,472.64 | \$1,149,178.57 | \$694,223.81 | \$22,579.83 | \$90,331.84 | \$20,158.59 |

TABLE VII
DETAIL OF DISBURSEMENTS FOR THE BIENNIUM 1928-1930—Continued

| DEPARTMENT | Total for the Biennium | For Salaries and Wages | For Misc. & Operating Expenses | For Traveling Expenses | FOR CAPITAL OUTLAY Equip. & Misc. Capital Expenses | Library Books |
|--|------------------------------|------------------------------|--------------------------------------|------------------------------|---|------------------|
| Forward—General University | \$1,976,472.64 | \$1,149,178.57 | \$694,223.81 | \$22,579.83 | \$90,331.84 | \$20,158.59 |
| EASTERN BRANCH—Princess Anne: | | | | | | |
| State Fund | | | | | | |
| 1st year | \$23,120.00 | \$17,395.94 | \$5,232.01 | | \$492.05 | |
| 2nd year | 25,120.00 | 17,673.50 | 6,649.38 | | 797.12 | |
| Federal Fund | | | | | | |
| 1st year | 9,913.97 | 9,913.97 | | | | |
| 2nd year | 9,775.00 | 9,775.00 | | | | |
| General Receipts | | | | | | |
| 1st year | 9,963.88 | 898.10 | 8,382.25 | \$174.06 | 509.47 | |
| 2nd year | 8,345.57 | 1,324.62 | 5,874.70 | 51.25 | 979.45 | 115.55 |
| Total | \$42,997.85 | \$28,208.01 | \$13,614.26 | \$174.06 | \$1,001.52 | |
| Total | 43,240.57 | 28,773.12 | 12,524.08 | 51.25 | 1,776.57 | \$115.55 |
| Total Eastern Branch Expenditures for the Biennium 1928-30 | \$86,238.42 | \$56,981.13 | \$26,138.34 | \$225.31 | \$2,778.09 | \$115.55 |

TABLE VII
DETAIL OF DISBURSEMENTS FOR THE BIENNIUM 1928-1930—Continued

| DEPARTMENT | Total for the Biennium | For Salaries and Wages | For Misc. & Operating Expenses | For Traveling Expenses | FOR CAPITAL OUTLAY Equip. & Misc. Capital Expenditures | Library Books |
|--|------------------------------|------------------------------|--------------------------------------|------------------------------|---|------------------|
| <i>Experiment Station:</i> | | | | | | |
| State Fund.....1st year | \$66,900.00 | \$40,044.25 | \$22,881.02 | \$942.10 | \$2,531.15 | \$501.48 |
| State Fund.....2nd year | 69,000.00 | 40,732.43 | 23,672.11 | 822.46 | 3,117.17 | 655.83 |
| Biological Laboratory.....1st year | 11,614.59 | 4,400.88 | 7,026.03 | 29.89 | 157.79 | |
| Biological Laboratory.....2nd year | 9,905.57 | 5,141.91 | 4,688.81 | | 74.85 | |
| Ridgely Farm.....1st year | 5,551.39 | 3,937.60 | 1,019.19 | 91.80 | 502.80 | |
| Ridgely Farm.....2nd year | 5,098.67 | 4,011.72 | 811.48 | 205.39 | 70.08 | |
| Hatch Fund.....1st year | 14,562.30 | 14,049.82 | 512.48 | | | |
| Hatch Fund.....2nd year | 15,083.61 | 15,000.00 | 83.61 | | | |
| Adams Fund.....1st year | 14,794.56 | 13,833.35 | 557.45 | 41.93 | 356.58 | 5.25 |
| Adams Fund.....2nd year | 15,137.09 | 15,000.00 | 137.09 | | | |
| Purnell Fund.....1st year | 50,207.24 | 41,885.93 | 4,235.68 | 2,591.61 | 1,474.05 | 19.97 |
| Purnell Fund.....2nd year | 60,988.17 | 47,585.12 | 4,212.44 | 4,937.20 | 4,237.79 | 15.62 |
| Station Farm Fund.....1st year | 39,621.93 | 18,343.90 | 18,709.75 | 1,038.89 | 1,521.81 | 7.50 |
| Station Farm Fund.....2nd year | 20,484.43 | 14,933.05 | 4,577.23 | 102.19 | 807.96 | 4.00 |
| Fellowship Fund.....1st year | 4,292.46 | 3,200.00 | 108.02 | 948.05 | 36.39 | |
| Fellowship Fund.....2nd year | 3,273.14 | 2,192.16 | 400.37 | 660.09 | 20.52 | |
| Total.....1st year | \$207,544.47 | \$139,695.81 | \$55,049.62 | \$5,684.27 | \$6,580.57 | \$534.20 |
| Total.....2nd year | 198,970.68 | 144,596.39 | 38,583.14 | 6,727.33 | 8,388.37 | 675.45 |
| Total Experiment Station Expenditures for the Biennium 1928-1930 | \$406,515.15 | \$284,292.20 | \$93,632.76 | \$12,411.60 | \$14,968.94 | \$1,209.65 |

TABLE VII
DETAIL OF DISBURSEMENTS FOR THE BIENNIUM 1928-1930—Continued

| DEPARTMENT | Total for the Biennium | For Salaries and Wages | For Misc. & Operating Expenses | For Traveling Expenses | FOR CAPITAL OUTLAY Equip. & Misc. Capital Expenses | Library Books |
|---|------------------------------|------------------------------|--------------------------------------|------------------------------|---|------------------|
| <i>Agricultural and Home Economics Extension:</i> | | | | | | |
| State Smith Lever | \$46,287.11 | \$35,200.00 | \$4,587.91 | \$6,126.77 | \$372.43 | |
| State Smith Lever | 46,287.11 | 35,200.00 | 4,520.23 | | 373.98 | |
| County Demonstration | 60,000.00 | 48,000.00 | 3.25 | 11,996.75 | | |
| County Demonstration | 60,000.00 | 48,000.00 | | 11,997.64 | | |
| General Extension | 36,106.11 | 14,760.60 | 7,585.86 | 12,912.90 | | \$50.93 |
| General Extension | 33,092.48 | 11,722.12 | 8,238.68 | 12,733.21 | | 90.51 |
| Marketing Extension | 10,000.00 | 7,008.00 | 1,093.34 | 1,782.53 | | 36.50 |
| Marketing Extension | 12,000.00 | 8,059.08 | 1,852.93 | 1,729.28 | | 34.50 |
| Canning Extension | 10,000.00 | 7,000.00 | 967.70 | 1,877.07 | | 11.20 |
| Canning Extension | 10,000.00 | | 1,403.03 | 2,051.69 | | |
| Poultry Extension | 3,000.00 | 2,000.00 | 239.83 | 760.17 | | |
| Poultry Extension | 1,500.00 | 1,000.00 | 3.82 | 496.18 | | |
| Federal Smith-Lever | 55,203.20 | 45,955.23 | 2,212.53 | 7,014.44 | 21.00 | |
| Federal Smith-Lever | 58,074.73 | 48,210.78 | 1,635.62 | 8,165.58 | 62.75 | |
| Fed. S-Lever Supplm. | 14,126.60 | 14,126.60 | | | | |
| Fed. S-Lever Supplm. | 17,250.37 | 17,250.37 | | | | |
| Capper-Ketcham | 23,652.68 | 23,236.00 | 416.68 | | | |
| Capper-Ketcham | 26,744.18 | 26,294.93 | 1.42 | | | |
| Adhn. Fed. Cooperative Fund | 961.63 | 765.90 | | 447.83 | | |
| Advanced Registry Testing | 9,856.58 | 7,865.25 | 73.03 | 1,918.30 | | |
| Advanced Registry Testing | 7,393.54 | 5,676.00 | 128.45 | 1,569.59 | 19.50 | |
| Sub-Total | \$265,232.28 | \$203,151.68 | \$16,940.30 | \$43,628.76 | \$1,412.91 | \$98.63 |
| Sub-Total | \$276,304.04 | \$210,679.18 | \$18,026.37 | \$46,339.80 | \$1,133.68 | \$125.01 |

TABLE VII
DETAIL OF DISBURSEMENTS FOR THE BIENNIUM 1928-1930—Continued

| DEPARTMENT | Total for the Biennium | For Salaries and Wages | For Misc. & Operating Expenses | For Traveling Expenses | FOR CAPITAL OUTLAY Equip. & Misc. Capital Expenditures | Library Books |
|---|------------------------------|------------------------------|--------------------------------------|------------------------------|---|------------------|
| Forward— | | | | | | |
| <i>Mining Extension:</i> | | | | | | |
| State Fund | \$2,100.00 | \$2,100.00 | | | | |
| State Fund | 2,100.00 | 2,100.00 | | | | |
| Smith-Hughes Fund | 1,920.00 | 1,920.00 | | | | |
| Smith-Hughes Fund | 1,920.00 | 1,920.00 | | | | |
| Sub-Total | \$4,020.00 | \$4,020.00 | | | | |
| Sub-Total | 4,020.00 | 4,020.00 | | | | |
| Total Extension Service Expenditures for the Biennium | \$549,576.32 | \$421,870.86 | \$34,966.67 | \$89,968.56 | \$2,546.59 | \$223.64 |
| <i>Public Service and Regulatory:</i> | | | | | | |
| Seed Inspection | \$9,700.00 | \$8,663.96 | \$329.53 | \$165.99 | \$518.14 | \$22.38 |
| Seed Inspection | 10,000.00 | 9,025.63 | 375.71 | 436.12 | 159.22 | 3.32 |
| State Dairymen's Assn. | 5,000.00 | 2,203.82 | *2,400.00 | 396.18 | | |
| State Dairymen's Assn. | 5,000.00 | 4,838.35 | | 161.65 | | |
| State Horticulture Dept. | 12,560.00 | 8,400.00 | 586.44 | 3,400.85 | 145.71 | 27.00 |
| State Horticulture Dept. | 13,900.00 | 9,400.00 | 860.93 | 3,513.78 | 97.29 | 28.00 |
| Insect Control | 18,719.84 | 12,505.51 | 4,962.44 | 1,175.49 | 76.40 | |
| Insect Control | 25,014.62 | 9,615.02 | 1,003.68) | 907.47 | 1,219.45 | |
| Payment of Loan | | | 12,269.00) | | | |
| Total | \$45,979.84 | \$31,773.29 | \$8,278.41 | \$5,138.51 | \$740.25 | \$49.38 |
| Total | 53,914.62 | 32,879.00 | 14,509.32 | 5,019.02 | 1,475.96 | 31.32 |
| Total Public Service and Regulatory Expenditures for the Biennium 1928-1930 | \$99,894.46 | \$64,652.29 | \$22,787.73 | \$10,157.53 | \$2,216.21 | \$80.70 |

*Transfer to Extension Service.

TABLE VII
DETAIL OF DISBURSEMENTS FOR THE BIENNIUM 1928-1930—Continued

| DEPARTMENT | Total for the Biennium | For Salaries and Wages | For Misc. & Operating Expenses | For Traveling Expenses | FOR CAPITAL Equip. & Misc. Capital Expenses | OUTLAY Library Books |
|---|------------------------------|------------------------------|--------------------------------------|------------------------------|--|----------------------------|
| <i>Forward—</i> | | | | | | |
| <i>Grand Summary of Disbursements:</i> | | | | | | |
| General University..... | \$958,796.13 | \$551,218.13 | \$351,930.79 | \$10,950.05 | \$36,903.09 | \$7,794.07 |
| General University..... | 1,017,676.51 | 597,960.44 | 342,293.02 | 11,629.78 | 53,428.75 | 12,364.52 |
| Eastern Branch..... | 42,997.85 | 28,208.01 | 13,614.26 | 174.06 | 1,001.52 | ..... |
| Eastern Branch..... | 43,240.57 | 28,773.12 | 12,524.08 | 51.25 | 1,776.57 | 115.55 |
| Experiment Station..... | 207,544.47 | 139,695.81 | 55,049.62 | 5,684.27 | 6,580.57 | 534.20 |
| Experiment Station..... | 198,970.68 | 144,596.39 | 38,583.14 | 6,727.33 | 8,388.37 | 675.45 |
| Extension Service..... | 269,252.28 | 207,171.68 | 16,940.30 | 43,628.76 | 1,412.91 | 98.63 |
| Extension Service..... | 280,324.04 | 214,699.18 | 18,026.37 | 46,339.80 | 1,133.68 | 125.01 |
| Public Service & Regulatory..... | 45,979.84 | 31,773.29 | 8,278.41 | 5,138.51 | 740.25 | 49.38 |
| Public Service & Regulatory..... | 53,914.62 | 32,879.00 | 14,509.32 | 5,019.02 | 1,475.96 | 31.32 |
| Grand Total of Disbursements for the Biennium 1928-1930..... | \$3,118,696.99 | \$1,976,975.05 | \$871,749.31 | \$135,342.83 | \$112,841.67 | \$21,788.13 |

TABLE VIII
DETAIL OF ASSETS-SUPPLIES AS OF SEPTEMBER 30, 1930

| GENERAL UNIVERSITY: | | | | | | | | | |
|------------------------------------|----------------|--|---------------------------------------|--------------------------------|---------------------------|----------|-------------------|--|--|
| | Dept. Total | Office Sup- plies and Stationery | Chemicals & Laboratory Supplies | Farm and Garden Products | Lumber and Hardware | Fuel | Other Supplies | | |
| President's Office | \$10.00 | \$10.00 | | | | | | | |
| Business Offices | 877.58 | 877.58 | | | | | | | |
| Registrar's Office | 432.58 | 432.58 | | | | | | | |
| Dean of Women | 56.50 | 56.50 | | | | | | | |
| Library | 62.96 | 62.96 | | | | | | | |
| Bureau of Information | 105.55 | 105.55 | | | | | | | |
| College of Arts and Sciences | 9,764.16 | 145.35 | \$9,568.81 | | | | \$50.00 | | |
| College of Agriculture | 3,781.51 | 323.79 | 1,844.52 | \$1,590.20 | \$5.50 | | 17.50 | | |
| Bacteriology and Sanitation | 3,986.32 | 125.19 | 3,861.13 | | | | | | |
| College of Engineering | 408.33 | 120.33 | 125.00 | | 20.00 | \$3.00 | 140.00 | | |
| College of Education | 163.34 | 163.34 | | | | | | | |
| College of Home Economics | 26.59 | 26.59 | | | | | | | |
| Military Science and Tactics | 30.50 | 30.50 | | | | | | | |
| Graduate School | 142.74 | 83.89 | 58.85 | | | | | | |
| General Service | 9,290.95 | 27.11 | 16.62 | 114.78 | 2,677.69 | 446.20 | 6,008.55 | | |
| Purchasing Department | 107.17 | 107.17 | | | | | | | |
| Dining Hall | 47.14 | 47.14 | | | | | | | |
| Dining Hall—Food Supplies | 1,437.64 | | | | | | 1,437.64 | | |
| State Inspection Laboratory | 148.59 | 148.59 | | | | | | | |
| Dairy Manfg. Laboratory: | | | | | | | | | |
| Salesroom Supplies..... | \$738.44 | | | | | | | | |
| Finished goods | 304.64 | | | | | | | | |
| Raw Material | 1,357.51 | | | | | | | | |
| Operating Supplies..... | 2,661.08 | | | | | | | | |
| Manfg. Supplies | 655.61 | | | | | | | | |
| Milk Products | 18.35 | | | | | | | | |
| Office Supplies | 127.42 | | | | | | | | |
| Student Supply Store: | | | | | | | | | |
| Saleable Stock | 5,863.05 | 127.42 | | | | | 5,735.63 | | |
| University Press: | | | | | | | | | |
| Saleable Stock | 5,194.97 | | | | | | 5,194.97 | | |
| Saleable Stock | 500.34 | | | | | | 500.34 | | |
| Totals—General University | \$42,438.51 | \$3,021.58 | \$15,474.93 | \$1,704.98 | \$2,703.19 | \$449.20 | \$19,084.63 | | |

TABLE VIII
DETAIL OF ASSETS-SUPPLIES AS OF SEPTEMBER 30, 1930—Continued

| Forward— | Dept. Total | Office Sup- plies and Stationery | Chemicals & Laboratory Supplies | Farm and Garden Products | Lumber and Hardware | Fuel | Other Supplies |
|---------------------------------|----------------|--|---------------------------------------|--------------------------------|---------------------------|------------|-------------------|
| Totals—General University | \$42,438.51 | \$3,021.58 | \$15,474.93 | \$1,704.98 | \$2,703.19 | \$449.20 | \$19,084.63 |
| Totals—Experiment Station | 6,155.00 | 790.95 | 1,922.88 | 2,197.57 | 50.00 | 1,048.00 | 145.60 |
| Totals—Extension Service | 2,164.32 | 2,164.32 | | | | | |
| Totals—Eastern Branch | 1,436.28 | 54.60 | 143.40 | 1,000.00 | 10.33 | 121.50 | 106.45 |
| Total—Inventory of Supplies... | \$52,194.11 | \$6,031.45 | \$17,541.21 | \$4,902.55 | \$2,763.52 | \$1,618.70 | \$19,336.68 |

TABLE IX

SUMMARY OF CAPITAL ASSETS—LAND, BUILDINGS, EQUIPMENT AND OTHER CAPITAL ASSETS
COLLEGE PARK AND SUB-STATIONS

| | Land | Building | Equipment | Other Capital Assets | Total Sept. 30, 1930 |
|---|--------------|----------------|--------------|----------------------------|----------------------------|
| General University | \$154,427.47 | \$1,286,584.90 | \$480,095.31 | \$104,107.61 | \$2,025,215.29 |
| Experiment Station | 9,600.00 | 98,498.29 | 119,321.35 | ..... | 227,419.64 |
| Extension Service ..... | ..... | ..... | 25,582.67 | ..... | 25,582.67 |
| Eastern Branch | 9,000.00 | 48,063.00 | 23,249.03 | ..... | 80,312.03 |
| Total Plant Assets—College Park and Sub-Stations | \$173,027.47 | \$1,433,146.19 | \$648,248.36 | \$104,107.61 | \$2,358,529.63 |

TABLE X

DETAIL OF ASSETS—LAND AT COLLEGE PARK AND SUB-STATIONS AS OF SEPTEMBER 30, 1930

| | Valua- tion Sept. 30, 1928 | Additions for Biennium | Valua- tion Sept. 30, 1930 |
|---|----------------------------------|------------------------------|----------------------------------|
| <i>College Park:</i> | | | |
| 286 Acres in Campus | \$85,800.00 | | \$85,800.00 |
| 12 Acres Experiment Station | 3,600.00 | | 3,600.00 |
| <i>Ridgely:</i> | | | |
| 50 Acres Experiment Sub-Station | 6,000.00 | | 6,000.00 |
| <i>Princess Anne:</i> | | | |
| 73½ Acres School for Negro Students | 9,000.00 | | 9,000.00 |
| <i>Beltsville:</i> | | | |
| 270 2/3 Acres Horticultural Farm | | \$68,627.47 | 68,627.47 |
| Totals—Land | \$104,400.00 | \$68,627.47 | \$173,027.47 |

TABLE XI

DETAIL OF ASSETS—BUILDINGS COLLEGE PARK AND SUB-STATIONS AS OF SEPTEMBER 30, 1930

| GENERAL UNIVERSITY—College Park: | | | |
|---|----------------------------------|------------------------------|----------------------------------|
| | Valua- tion Sept. 30, 1928 | Additions for Biennium | Valua- tion Sept. 30, 1930 |
| Agricultural Building | \$ 199,731.94 | | \$ 199,731.94 |
| Barber Shop | 400.00 | | 400.00 |
| Boiler House | 160.00 | | 160.00 |
| Calvert Hall (Dormitory for Men) | 107,000.00 | | 107,000.00 |
| Cannery | 625.00 | | 625.00 |
| Carriage Shed (Garage) | 900.00 | | 900.00 |
| Chemistry Building | 210,442.50 | | 210,442.50 |
| Dairy Manufacturing Laboratory | 111,300.00 | \$ 44.36 | 111,344.36 |
| Dining Hall | 153,073.94 | | 153,073.94 |
| Engineering Buildings | 80,000.00 | | 80,000.00 |
| Filtration Plant | 25,142.63 | | 25,142.63 |
| Gas Machine House | 300.00 | | 300.00 |
| Girls' Dormitory (Y-Hut) | 3,000.00 | | 3,000.00 |
| Girls' Dormitory (Gerneaux Hall) | 8,000.00 | | 8,000.00 |
| Greenhouses—College | 8,000.00 | | 8,000.00 |
| Gymnasium, Armory and Stadium | 162,559.96 | 466.57 | 163,026.53 |
| Home Economics Laboratory | 18,000.00 | | 18,000.00 |
| Home Economics Practice House | 25,500.00 | | 25,500.00 |
| Hospital | 7,500.00 | | 7,500.00 |
| Insectary | 150.00 | | 150.00 |
| Library | 16,090.00 | 295.00 | 16,385.00 |
| New Pump House | 100.00 | | 100.00 |
| Old Pump House | 1,100.00 | | 1,100.00 |
| Science Building (Morrill Hall) | 36,775.00 | 145.00 | 36,920.00 |
| Silverster Hall—(Dormitory for Men) | 97,000.00 | | 97,000.00 |
| Storage Shed | 270.00 | | 270.00 |
| Stable and Garage | 1,600.00 | | 1,600.00 |
| Tenant House | 533.00 | | 533.00 |
| Water Tower and Tank | 4,400.00 | | 4,400.00 |
| Totals—General University Buildings..... | \$1,285,633.97 | \$ 950.93 | \$1,286,584.90 |

TABLE XI

DETAIL OF ASSETS—BUILDINGS COLLEGE PARK AND SUB-STATIONS AS OF SEPTEMBER 30, 1930
Continued

Forward—

EXPERIMENT STATION—College Park:

| | Valua- tion Sept. 30, 1928 | Additions for Biennium | Valua- tion Sept. 30, 1930 |
|--|----------------------------------|------------------------------|----------------------------------|
| Agromony Building..... | \$ 3,500.00 | | \$ 3,500.00 |
| Bacteriology Building..... | 11,200.00 | | 11,200.00 |
| Barn..... | 260.00 | | 260.00 |
| Cow Stable..... | 4,200.00 | | 4,200.00 |
| Dairy Building..... | 1,050.00 | | 1,050.00 |
| Dairy Building and Stable..... | 17,300.00 | | 17,300.00 |
| Hay Barrack..... | 2,300.00 | | 2,300.00 |
| Hog House..... | 830.00 | | 830.00 |
| Horticultural Building..... | 8,800.00 | | 8,800.00 |
| Main Poultry House..... | 2,000.00 | | 2,000.00 |
| Oxidation Plant (Todd Laboratory)..... | 8,424.29 | \$ 5,500.00** | 13,924.29 |
| Poultry Feed Houses..... | 400.00 | | 400.00 |
| Poultry Houses..... | 706.00 | | 706.00 |
| Poultry Storage House..... | 300.00 | | 300.00 |
| Rosburg Building..... | 11,500.00 | | 11,500.00 |
| Seed Storage and Machinery Building..... | 1,200.00 | | 1,200.00 |
| Silos (three)..... | 1,333.00 | | 1,333.00 |
| Tenant Houses: | | | |
| Farm House..... | 3,100.00 | | 3,100.00 |
| Pebbledash House..... | 1,290.00 | | 1,290.00 |
| Shingle Roof House..... | 1,240.00 | | 1,240.00 |
| Concrete Block House..... | 2,200.00 | | 2,200.00 |
| Frame House..... | 1,100.00 | | 1,100.00 |
| Ridgely Farm: | | | |
| Chicken House..... | 125.00 | | 125.00 |
| Hog House..... | 80.00 | | 80.00 |
| Main Buildings..... | 6,000.00 | | 6,000.00 |
| Tenant and Smoke House..... | 585.00 | | 585.00 |
| Tools and Machinery Building..... | 750.00 | | 750.00 |
| Wagon Shed..... | 225.00 | | 225.00 |
| Upper Marlboro: | | | |
| Tobacco Barn..... | 1,000.00 | | 1,000.00 |
| Totals—Experiment Station Buildings..... | \$ 92,998.29 | \$ 5,500.00 | \$ 98,498.29 |

TABLE XI
DETAIL OF ASSETS—BUILDINGS COLLEGE PARK AND SUB-STATIONS AS OF SEPTEMBER 30, 1930
Continued

Forward—

EASTERN BRANCH:

| | | | | |
|---|----|----------------|-------------|-----------------|
| Portable Classroom | | | | |
| Barn | \$ | 2,250.00 | | \$ 2,250.00 |
| Dwelling | | 2,500.00 | | 2,500.00 |
| Six Small Out-Buildings..... | | 2,000.00 | | 2,000.00 |
| Dormitory and Classroom..... | | 1,313.00 | | 1,313.00 |
| | | 40,000.00 | | 40,000.00 |
| Totals—Eastern Branch Buildings..... | \$ | 48,063.00 | | \$ 48,063.00 |
| Totals—Buildings—College Park and Sub-Stations..... | | \$1,426,695.26 | \$ 6,450.93 | \$1,433,146.19* |

*See separate statement for buildings under construction.

**In addition to the \$5,500 in improvements made by the University of Maryland the Livestock Sanitary Service disbursed \$24,357.02 for additions to and improvement of the Todd Laboratory. A small animal building and quarters to house cows for experimental work were constructed by the Livestock Sanitary Service at a cost of \$4,162.89 and \$1,969.09, respectively.

TABLE XII
DETAIL OF ASSETS—EQUIPMENT COLLEGE PARK AND SUB-STATIONS AS OF SEPTEMBER 30, 1930

| | Equip- ment | Live Stock | Library Books, etc. | Total Valua- tion Sept. 30, 1930 |
|---|---------------------|---------------------|------------------------|---|
| General University | \$409,204.40 | \$ 414.50 | \$ 70,476.41 | \$480,095.31 |
| Experiment Station | 101,882.61 | 14,617.00 | 2,821.74 | 119,321.35 |
| Extension Service | 24,994.30 | 588.37 | ..... | 25,582.67 |
| Eastern Branch | 20,639.03 | 960.00 | 1,650.00 | 23,249.03 |
| Totals—Equipment—College Park and Sub-Stations..... | <u>\$556,720.34</u> | <u>\$ 16,579.87</u> | <u>\$ 74,948.15</u> | <u>\$648,248.36</u> |

TABLE XIII
DETAIL OF ASSETS—ROADS, WALKS, SEWERS, LIGHTS, ETC., AT COLLEGE PARK ONLY
AS OF SEPTEMBER 30, 1930

| | Valuation Sept. 30, 1930 |
|--|--------------------------------|
| Water and Sewer Lines..... | \$ 6,240.00 |
| Roads and Walks..... | 54,641.87 |
| Campus Plantings and Improvements..... | 23,430.42 |
| Campus Lights..... | 6,314.57 |
| Athletic Field Improvements..... | 13,480.75 |
| Total—Miscellaneous Capital Assets—College Park..... | <u>\$104,107.61</u> |

TABLE XIV STATEMENT OF BUILDING FUNDS SEPTEMBER 30, 1930

RECEIPTS:

| | |
|---|---------------------|
| Balance October 1, 1928..... | \$ 9,339.83 |
| From Appropriation for Library Building..... | 175,000.00 |
| Loan from Union Trust Company..... | 69,081.88 |
| Appropriation for Purchase of Land..... | 70,000.00 |
| First Installment of Appropriation of \$200,000 for Central Power Plant..... | 50,000.00 |
| Interest on Building Fund Deposits..... | 2,847.91 |
| Total Receipts..... | <u>\$376,269.62</u> |

EXPENDITURES:

| | |
|---|----------------------|
| Payments on Account of New Library..... | \$128,502.65 |
| Payments on Account of Purchase of Land..... | 68,627.47 |
| Payments on Account of Central Power Plant..... | 36,446.00 |
| Purchase of New Equipment..... | 1,757.20 |
| Remittances to State Treasurer— | |
| Interest on Building Fund Deposits..... | 2,847.91 |
| Payment of Loan and Interest..... | 70,454.41 |
| Total Expenditures..... | <u>\$308,635.64</u> |
| Balance September 30, 1930..... | <u>\$ 67,633.98*</u> |

*The following balances are held by the State Treasurer for buildings under construction or to be constructed:

| | |
|---|---------------------|
| Balance in Library Appropriation..... | \$ 20,000.00 |
| Balance in Power Plant Appropriation..... | 150,000.00 |
| Appropriation for Horticultural Building..... | 150,000.00 |
| Addition to Engineering Building..... | 100,000.00 |
| New Dormitory for Women..... | 125,000.00 |
| Total Building Fund in State Treasury..... | <u>\$545,000.00</u> |

FINANCIAL DEPARTMENT—(BALTIMORE)

To the President of the University:

I submit herewith in the following pages, Statement of Receipts and Expenditures of the Baltimore Schools for the biennium ending September 30th, 1930.

Very respectfully,

J. H. TUCKER,
Acting Comptroller.

TABLE I

SUMMARY UNIVERSITY OF MARYLAND BALTIMORE SCHOOLS
STATEMENT OF RECEIPTS AND EXPENDITURES SHOWING BALANCES AT BEGINNING AND END OF
BIENNIUM 1928-30

| | Balance October 1st, 1928 | Total Re- ceipts for Biennium | Total Avail- able for Biennium | Total Ex- penditures for Biennium | Balance September 30th, 1930 |
|----------------------------------|---------------------------------|-------------------------------------|--------------------------------------|---|------------------------------------|
| Medicine | \$80,370.88 | \$510,784.90 | \$591,155.78 | \$469,425.54 | \$121,730.24 |
| Dentistry | 29,805.20 | 324,988.06 | 354,793.26 | 282,759.82 | 72,033.44 |
| Pharmacy | 37,007.89 | 219,587.35 | 256,595.24 | 209,163.78 | 47,431.46 |
| Law | 46,832.92 | 67,801.75 | 114,634.67 | 101,685.24 | 12,949.43 |
| Business Administration | 390.98 | 45.00 | 435.98 | 435.98 | |
| Central Office and Library | 317.93 | 76,600.78 | 76,918.71 | 72,957.78 | 3,960.93 |
| Total | \$194,725.80 | \$1,199,807.84 | \$1,394,533.64 | \$1,136,428.14 | \$258,105.50 |

Reconciliation with Depositories as of Sept. 30, 1930:

| | |
|--|--------------|
| Union Trust Co. of Maryland | |
| Cash in Hands of State Comptroller September 30th, 1930 | \$206,254.88 |
| Less: Cash advanced by State Comptroller as a working fund | 51,850.62 |
| Total Cash Balance September 30th, 1930 | \$258,105.50 |

TABLE II

UNIVERSITY OF MARYLAND BALTIMORE SCHOOLS
CONSOLIDATED STATEMENT OF RECEIPTS AND EXPENDITURES FOR BIENNium ENDING
SEPTEMBER 30, 1930

| RECEIPTS: | Receipts 1928-29 | Receipts 1929-30 | Total Re- ceipts for Biennium |
|--|---------------------|---------------------|-------------------------------------|
| Cash Balance 10-1-28 | \$194,725.80 | | \$194,725.80 |
| Students' Fees | 414,880.92 | 474,717.44 | 889,598.36 |
| Deposits on Skeletons | 526.00 | 42.00 | 568.00 |
| Deposits on Specimens | 313.85 | 1,162.50 | 1,476.35 |
| Deposits on Locks | | 111.15 | 111.15 |
| State Apprn. Account Maintenance | 72,500.00 | 87,211.15 | 159,711.15 |
| City of Balto. and Other Sources Acct. Obstetrics | 9,275.15 | 10,867.40 | 20,142.55 |
| I. E. Emerson Fund | 6,000.00 | 6,000.00 | 12,000.00 |
| Julius Friedenwald Research Fund | 50.67 | 96.72 | 147.39 |
| Victor G. Bloede Fund | | 100.00 | 100.00 |
| Special Research Fund | | .81 | .81 |
| Medical Ext. Fund | | 250.00 | 250.00 |
| Sundry Receipts | 39.50 | 291.10 | 330.60 |
| Duplicate Diplomas | 22.00 | 61.00 | 83.00 |
| Special Courses | 2,160.50 | | 2,160.50 |
| Sale of Locks | 135.00 | | 135.00 |
| Infirmary Receipts | 38,608.15 | 27,326.67 | 65,934.82 |
| Locker and Breakage | 655.00 | 1,370.27 | 2,025.27 |
| Chas. L. Henry School | 100.00 | 100.00 | 200.00 |
| Interest on Deposits | 1,172.31 | 1,327.54 | 2,499.85 |
| Rent | | 467.50 | 467.50 |
| Sale Old Equipment | 80.00 | 1,080.00 | 1,160.00 |
| Discount Voucher Payable | 215.48 | 402.60 | 618.08 |
| <i>Transferred Funds:</i> | | | |
| From—Medical School | 6,039.00 | 6,039.00 | 12,078.00 |
| Dental School | 4,575.00 | 4,575.00 | 9,150.00 |
| Pharmacy School | 3,660.00 | 6,047.46 | 9,707.46 |
| Law School | 4,026.00 | 4,026.00 | 8,052.00 |
| Contingent Fund—Transferred from School of Business Administration | | 426.98 | 426.98 |
| Contingent Fund—Transferred from Central Office and Library | | 673.02 | 673.02 |
| Total Receipts | \$759,760.33 | \$634,773.31 | \$1,394,533.64 |

UNIVERSITY OF MARYLAND BALTIMORE SCHOOLS
CONSOLIDATED STATEMENT OF RECEIPTS AND EXPENDITURES FOR BIENNIUM ENDING
SEPTEMBER 30, 1930

| EXPENDITURES: | Expendi- tures | Total Ex- penditures for Biennium |
|---|-------------------|---|
| <i>Capital:</i> | | |
| Office Equipment | 1928-1929 | |
| Laboratory Equipment | \$2,116.41 | \$4,487.80 |
| Educational, Vocational and Recreational Equipment .. | 17,080.63 | 48,320.26 |
| Sinking Fund | 8,437.71 | 6,532.69 |
| Contingent Fund (RE) | 1,600.00 | 1,600.00 |
| Improvement and Renewal (Gen'l) | 52.50 | 2,653.39 |
| Imp. and Renew.—Old Dental and Church Bldgs. | 7,700.00 | 6,413.56 |
| Real Estate (Land) | | 28,999.11 |
| Motor Vehicles | | 27,387.00 |
| | | 467.72 |
| | \$36,987.25 | \$126,861.53 |
| | | \$163,848.78 |
| <i>Operating:</i> | | |
| Salaries and Wages | \$344,752.38 | \$356,714.16 |
| General Repairs | 4,878.35 | 5,637.26 |
| Light, Heat, Power and Water | 3,232.40 | 9,624.39 |
| Traveling Expenses | 2,102.16 | 2,504.56 |
| Transportation | 1,110.60 | 1,991.73 |
| Communications | 3,525.96 | 4,269.28 |
| Other Expenses | 11,411.59 | 8,030.72 |
| Fuel Supplies | 1,689.30 | 1,789.86 |
| Office Supplies and Stationery | 2,180.76 | 2,104.54 |
| Printing | 5,211.60 | 6,512.95 |
| Medical and Surgical Supplies | 2,141.87 | 3,660.93 |
| Laboratory Supplies | 22,683.75 | 24,829.63 |
| Clinical Supplies | 13,245.68 | 9,637.98 |
| Household, Laundry and Cleaning | 1,896.21 | 2,748.06 |
| Rent | 14,770.36 | 13,895.35 |
| Insurance | 2,129.84 | 2,143.03 |
| Interest—Bonds and Mortgages | 9,734.37 | 9,990.00 |
| Deposits on Locks | 49.50 | |
| Babies and Children's Clinic | 3,000.00 | 3,500.00 |
| Association Dues | 92.81 | 2.00 |
| Sale of Locks | | 1,103.82 |
| Special Administrative Expenses | 692.05 | 1,545.86 |
| | \$450,531.54 | \$472,236.11 |
| | | \$922,767.65 |

TABLE II—*Continued*
UNIVERSITY OF MARYLAND BALTIMORE SCHOOLS
CONSOLIDATED STATEMENT OF RECEIPTS AND EXPENDITURES FOR BIENNIUM ENDING
SEPTEMBER 30, 1930

EXPENDITURES:

Special Funds:

| | | | |
|---|--------------------------------|--------------------------------|---|
| Special Research Fund..... | Expendi- tures 1928-1929 | Expendi- tures 1929-1930 | Total Ex- penditures for Biennium |
| **Isaac E. Emerson Fund..... | \$164.97 | 4,805.31 | \$164.97 |
| Medical Extension Fund..... | 2,750.00 | | 7,555.31 |
| Victor G. Bloede Fund..... | 79.20 | | 79.20 |
| Elizabeth Thompson Fund..... | 18.00 | 111.44 | 129.44 |
| Deposits on Skeletons..... | 56.38 | | 56.38 |
| **Isaac E. Emerson Fund Reserved for Equipment..... | 526.00 | | 526.00 |
| Petty Cash..... | 112.95 | | 112.95 |
| Advance to Mrs. Reed—Change for Clinic..... | | 1,000.00 | 1,000.00 |
| | | 100.00 | 100.00 |
| | \$3,707.50 | \$6,016.75 | \$9,724.25 |

Transferred Funds:

| | | | |
|---|-------------|-------------|-------------|
| Central Office and Library—Assessment of Schools..... | \$18,300.00 | \$18,300.00 | \$36,600.00 |
| Transferred to School of Dentistry..... | | 2,387.46 | 2,387.46 |
| Contingent Fund—Transferred to School of Law..... | | 1,100.00 | 1,100.00 |
| | \$18,300.00 | \$21,787.46 | \$40,087.46 |

Total Expenditures

\$1,136,428.14

*Cash Balance—Sept. 30, 1930

*Cash Balance September 30, 1930 includes student fees collected during and prior to September, applicable to year 1930-31

Note: Isaac E. Emerson Fund held in Reserve

** Amount Expended as Above

Balance as of September 30, 1930

\$258,105.50

\$206,440.25

19,250.00

7,668.26

\$11,581.74

TABLE III

UNIVERSITY OF MARYLAND SCHOOL OF MEDICINE STATEMENT OF RECEIPTS AND EXPENDITURES FOR BIENNium ENDING SEPTEMBER 30, 1930

RECEIPTS:

| | Receipts 1928-29 | Receipts 1929-30 | Total Re- ceipts for Biennium |
|---|---------------------|---------------------|-------------------------------------|
| Cash Balance October 1, 1928..... | \$ 80,370.88 | | \$ 80,370.88 |
| Students' Fees..... | 185,002.50 | 211,467.10 | 396,469.60 |
| Deposits on Skeltons..... | 478.00 | 18.00 | 496.00 |
| Deposits on Specimens..... | 313.85 | 1,162.50 | 1,476.35 |
| Deposits on Locks..... | | 111.15 | 111.15 |
| State Appropriation Account Maintenance..... | 42,500.00 | 42,500.00 | 85,000.00 |
| City of Baltimore and Other Sources Account Obstetrics..... | 9,275.15 | 10,867.40 | 20,142.55 |
| Isaac E. Emerson Fund..... | 1,500.00 | 1,500.00 | 3,000.00 |
| Julius Friedenwald Research Fund..... | 50.67 | 96.72 | 147.39 |
| Victor G. Bloede Fund..... | | 100.00 | 100.00 |
| Special Reserve Fund..... | | .81 | .81 |
| Medical Extension Fund..... | | 250.00 | 250.00 |
| Sundry Receipts..... | 9.50 | 84.60 | 94.10 |
| Duplicate Dip..... | 9.00 | 28.00 | 37.00 |
| Interest on Deposits..... | 548.56 | 772.09 | 1,320.65 |
| Sale Old Equipment..... | 80.00 | 1,000.00 | 1,080.00 |
| Special Courses..... | 375.00 | | 375.00 |
| Rent..... | | 467.50 | 467.50 |
| Disc. Vou. Pay..... | 102.99 | 113.81 | 216.80 |
| Total Receipts..... | \$320,616 10 | \$270,539.68 | \$591,155.78 |

EXPENDITURES:

Capital:

| | Expenditures 1928-1929 | Expenditures 1929-1930 | Total Ex- penditures for Biennium |
|---|---------------------------|---------------------------|---|
| Office Equipment..... | \$ 630.43 | \$ 258.24 | \$ 888.67 |
| Laboratory Equipment..... | 8,729.70 | 8,031.48 | 16,761.18 |
| Educational, Vocational and Recreational Equipment..... | 2,605.82 | 2,693.83 | 5,299.65 |

TABLE III—Continued

UNIVERSITY OF MARYLAND SCHOOL OF MEDICINE
STATEMENT OF RECEIPTS AND EXPENDITURES FOR BIENNIUM ENDING SEPTEMBER 30, 1930

EXPENDITURES—Continued:

Capital—Continued:

| | | | |
|---|---------------------------|---------------------------|------------------------------------|
| Sinking Fund | Expenditures 1928-1929 | Expenditures 1929-1930 | Total Expenditures for Biennium |
| Improvements and Renewals (General) | \$ 1,600.00 | \$ 1,600.00 | \$ 3,200.00 |
| Improvements and Renewals to Old Dental and Church Buildings | 52.50 | 112.27 | 164.77 |
| Contingent Fund (RE) | 7,700.00 | 28,999.11 | 36,699.11 |
| Real Estate (Land) ..... | ..... | 2,653.39 | 2,653.39 |
| Motor Vehicles ..... | ..... | 27,387.00 | 27,387.00 |
| ..... | ..... | 467.72 | 467.72 |

Operating:

| | | | |
|---------------------------------------|------------|------------|------------|
| Salaries and Wages | 119,818.76 | 130,759.76 | 250,578.52 |
| General Repairs | 2,766.11 | 1,930.82 | 4,696.93 |
| Light, Heat, Power and Water | 1,127.39 | 1,272.72 | 2,400.11 |
| Traveling Expenses | 550.29 | 741.60 | 1,291.89 |
| Transportation | 455.75 | 486.84 | 942.59 |
| Communication | 1,488.34 | 1,874.30 | 3,362.64 |
| Other Expenses | 7,066.67 | 3,291.15 | 10,357.82 |
| Fuel | 506.80 | 1,334.55 | 1,841.35 |
| Office Supplies and Stationery | 461.04 | 448.56 | 909.60 |
| Printing | 3,577.53 | 4,194.39 | 7,771.92 |
| Medical and Surgical Supplies | 2,141.87 | 3,660.93 | 5,802.80 |
| Laboratory Supplies | 11,387.43 | 11,925.24 | 23,312.67 |
| Household, Laundry and Cleaning | 604.67 | 383.46 | 988.13 |
| Rent | 10,128.16 | 9,921.16 | 20,049.32 |
| Insurance | 695.19 | 609.71 | 1,304.90 |
| Interest—Bonds and Mortgages | 9,734.37 | 8,850.00 | 18,584.37 |
| Babies' and Childrens' Clinic | 3,000.00 | 3,500.00 | 6,500.00 |
| Deposit on Locks | 49.50 | ..... | 49.50 |

TABLE III—Continued

UNIVERSITY OF MARYLAND SCHOOL OF MEDICINE

STATEMENT OF RECEIPTS AND EXPENDITURES FOR BIENNIUM ENDING SEPTEMBER 30, 1930

EXPENDITURES:

Special Funds—Continued:

| | Expenditures 1928-1929 | Expenditures 1929-1930 | Total Expenditures for Biennium |
|------------------------------|---------------------------|---------------------------|------------------------------------|
| Special Research Fund..... | \$ 164.97 | \$ | \$ 164.97 |
| **Isaac E. Emerson Fund..... | 1,250.00 | 375.00 | 1,625.00 |
| Medical Extension Fund..... | 79.20 | .. | 79.20 |
| Victor G. Bloede Fund..... | 18.00 | 111.44 | 129.44 |
| Elizabeth Thompson Fund..... | 56.38 | .. | 56.38 |
| Petty Cash..... | .. | 500.00 | 500.00 |
| Deposit on Skeletons..... | 526.00 | .. | 526.00 |

Transferred Funds:

| | | | |
|--|--------------|--------------|--------------|
| Central Office and Library Assessment of School..... | 6,039.00 | 6,039.00 | 12,078.00 |
| Total Expenditures..... | \$205,011.87 | \$264,413.67 | \$469,425.54 |

*Cash Balance September 30, 1930.....

\$121,730.24

*Cash Balance September 30, 1930, includes students' fees collected during and prior to September, applicable to the year 1930-31.....

\$ 88,163.75

Note: Isaac E. Emerson Fund held in Reserve.....

5,000.00

** Amount Expended as Above.....

1,625.00

Balance as of September 30, 1930.....

\$ 3,375.00

TABLE IV

UNIVERSITY OF MARYLAND SCHOOL OF DENTISTRY

STATEMENT OF RECEIPTS AND EXPENDITURES FOR BIENNIIUM ENDING SEPTEMBER 30, 1930

RECEIPTS:

| | Receipts 1928-29 | Receipts 1929-30 | Total Re- ceipts for Biennium |
|--|---------------------|---------------------|-------------------------------------|
| Cash Balance October 1, 1928 | \$ 29,805.20 | | \$ 29,805.20 |
| Students' Fees | 111,731.42 | 137,120.34 | 248,706.76 |
| Special Courses | 797.75 | | 797.75 |
| Deposits on Skeletons | 48.00 | 24.00 | 72.00 |
| Locker and Breakage Fees | 655.00 | 211.52 | 866.52 |
| State Appropriation Account Maintenance | | 5,000.00 | 5,000.00 |
| Sale of Locks | 135.00 | | 135.00 |
| Sundry Receipts | 30.00 | 183.50 | 213.50 |
| Duplicate Diplomas | 7.00 | 27.00 | 34.00 |
| Infirmary Receipts | 38,608.15 | 27,326.67 | 65,934.82 |
| Interest on Deposits | 198.94 | 195.62 | 394.56 |
| Sale of Old Equipment | | 80.00 | 80.00 |
| Discount—Vouchers Payable | 88.60 | 132.09 | 220.69 |
| Transferred from School of Pharmacy (Contingent Fund) | | 2,387.46 | 2,387.46 |
| | <u>\$182,105.06</u> | <u>\$172,688.20</u> | <u>\$354,793.26</u> |

EXPENDITURES:

Capital:

| | Expenditures 1928-1929 | Expenditures 1929-1930 | Total Ex- penditures for Biennium |
|--|---------------------------|---------------------------|---|
| Office Equipment | \$ 912.35 | \$ 1,347.65 | \$ 2,260.00 |
| Laboratory Equipment | 3,788.96 | 7,812.54 | 11,601.50 |
| Educational, Vocation and Rec. Equipment | 1,682.48 | 525.85 | 2,208.33 |
| Improvements and Renewals | | 2,083.77 | 2,083.77 |

Operating:

| | | | |
|--------------------|-----------|------------|------------|
| Salaries and Wages | 92,945.60 | 101,049.03 | 193,994.63 |
| General Repairs | 1,581.74 | 1,563.48 | 3,145.22 |

TABLE IV—Continued

UNIVERSITY OF MARYLAND SCHOOL OF DENTISTRY

STATEMENT OF RECEIPTS AND EXPENDITURES FOR BIENNIIUM ENDING SEPTEMBER 30, 1930

| EXPENDITURES: | Expendi- tures 1928-1929 | Expendi- tures 1929-1930 | Total Ex- penditures for Biennium |
|--|--------------------------------|--------------------------------|---|
| <i>Operating—Continued:</i> | | | |
| Light, Heat, Power and Water..... | \$ 1,175.44 | \$ 4,767.31 | \$ 5,942.75 |
| Traveling Expenses..... | 803.26 | 955.39 | 1,758.65 |
| Transportation..... | 245.10 | 781.00 | 1,026.10 |
| Communication..... | 854.57 | 1,028.62 | 1,883.19 |
| Other Expenses..... | 1,815.44 | 1,706.75 | 3,522.19 |
| Office Supplies and Stationery..... | 734.72 | 431.58 | 1,166.30 |
| Printing..... | 741.65 | 1,287.96 | 2,029.61 |
| Laboratory Supplies..... | 3,182.41 | 4,434.67 | 7,617.08 |
| Clinical Supplies..... | 13,245.68 | 9,637.98 | 22,883.66 |
| Household, Laundry and Cleaning..... | 817.31 | 1,353.44 | 2,170.75 |
| Fuel..... | 506.79 | | 506.79 |
| Rent..... | 2,321.06 | 1,987.12 | 4,308.18 |
| Insurance..... | 649.60 | 827.70 | 1,477.30 |
| Interest—Bonds and Mortgages..... | | 570.00 | 570.00 |
| Sale of Locks..... | | 1,103.82 | 1,103.82 |
| <i>Special Funds:</i> | | | |
| Advance to Mrs. Reed—Change for Clinic..... | | 100.00 | 100.00 |
| Petty Cash..... | | 250.00 | 250.00 |
| <i>Transferred Funds:</i> | | | |
| Central Office and Library—Assessment of School..... | 4,575.00 | 4,575.00 | 9,150.00 |
| Total Expenditures..... | \$132,579.16 | \$150,180.66 | \$282,759.82 |
| *Cash Balance September 30, 1930..... | | | \$ 72,033.44 |
| *Cash Balance September 30, 1930, includes students' fees collected during and prior to September, applicable to the year 1930-31..... | | | \$ 68,747.00 |

TABLE V

UNIVERSITY OF MARYLAND SCHOOL OF PHARMACY
STATEMENT OF RECEIPTS AND EXPENDITURES FOR BIENNIIUM ENDING SEPTEMBER 30, 1930

RECEIPTS:

| | | | |
|--|---------------------|---------------------|-------------------------------------|
| Cash Balance October 1, 1928..... | Receipts 1928-29 | Receipts 1929-30 | Total Re- ceipts for Biennium |
| Student Fees..... | \$ 37,007.89 | \$..... | \$ 37,007.89 |
| State Appropriation Account Maintenance..... | 85,702.00 | 101,826.00 | 187,528.00 |
| Special Courses..... | 10,000.00 | 10,000.00 | 20,000.00 |
| Isaac E. Emerson Fund..... | 987.75 | ..... | 987.75 |
| C. L. Henry Scholarship Fund..... | 4,500.00 | 4,500.00 | 9,000.00 |
| Duplicate Diplomas..... | 100.00 | 100.00 | 200.00 |
| Locker and Breakage..... | 6.00 | 5.00 | 11.00 |
| Sundry Receipts..... | ..... | 1,158.75 | 1,158.75 |
| Discount Vouchers Payable..... | 23.89 | 3.00 | 3.00 |
| Interest on Deposits..... | 261.66 | 142.23 | 166.12 |
| | | 271.07 | 532.73 |
| Total Receipts..... | \$138,589.19 | \$118,006.05 | \$256,595.24 |

EXPENDITURES:

Capital:

| | | | |
|---|---------------------------|---------------------------|---|
| Office Equipment..... | Expenditures 1928-1929 | Expenditures 1929-1930 | Total Ex- penditures for Biennium |
| Laboratory Equipment..... | \$ 248.48 | \$ 2,713.00 | \$ 2,961.48 |
| Educational, Vocational and Recreational Equipment..... | 4,561.97 | 32,476.24 | 37,038.21 |
| Improvements and Renewals..... | 2,217.17 | 1,537.65 | 3,754.82 |
|  | ..... | 4,217.52 | 4,217.52 |

TABLE V—Continued

UNIVERSITY OF MARYLAND SCHOOL OF PHARMACY
STATEMENT OF RECEIPTS AND EXPENDITURES FOR BIENNIIUM ENDING SEPTEMBER 30, 1930

EXPENDITURES—Continued:

Operating:

| | |
|--------------------------------------|--|
| Salaries and Wages..... | |
| General Repairs..... | |
| Light, Heat, Power and Water..... | |
| Traveling Expense..... | |
| Transportation..... | |
| Communication..... | |
| Other Expenses..... | |
| Fuel..... | |
| Office Supplies and Stationery..... | |
| Printing..... | |
| Laboratory Supplies..... | |
| Household, Laundry and Cleaning..... | |
| Rent..... | |
| Insurance..... | |
| Association Dues..... | |
| Interest—Bonds and Mortgages..... | |

Special Funds:

| | |
|--|--|
| **I. E. Emerson Fund..... | |
| **I. E. Emerson Reserve for Equipment..... | |
| Petty Cash..... | |

Transferred Funds:

| | |
|--|--|
| General Office and Library Assessment of School..... | |
| Transferred to School of Dentistry..... | |

Total Expenditures

*Cash Balance September 30, 1930

*Cash Balance September 30, 1930, includes students' fees collected during and prior to September, applicable to the year 1930-31.....

Note: Isaac E. Emerson Fund held in Reserve
Amount Expended as Above

Balance as of September 30, 1930

| Expenditures | 1928-1929 | 1929-1930 | Total Expenditures for Biennium |
|--------------|--------------|-----------|---------------------------------|
| \$ 49,953.02 | \$ 57,791.35 | | \$107,744.37 |
| 399.27 | 2,009.35 | | 2,408.62 |
| 550.17 | 3,154.03 | | 3,704.20 |
| 746.13 | 641.45 | | 1,387.50 |
| 264.67 | 585.91 | | 850.58 |
| 443.47 | 550.15 | | 993.62 |
| 1,019.46 | 2,029.82 | | 3,049.28 |
| 337.86 | | | 337.86 |
| 254.44 | 522.19 | | 776.63 |
| 350.32 | 575.75 | | 926.07 |
| 8,113.91 | 8,469.72 | | 16,583.63 |
| 315.61 | 904.83 | | 1,220.44 |
| 2,321.14 | 1,987.07 | | 4,308.21 |
| 133.28 | 151.85 | | 285.13 |
| 92.81 | 2.00 | | 94.81 |
| | 570.00 | | 570.00 |

| | |
|----------|----------|
| 1,500.00 | 1,500.00 |
| 112.95 | 4,430.31 |
| | 200.00 |

| | |
|----------|----------|
| 3,660.00 | 3,660.00 |
| | 2,387.46 |

\$209,163.78

\$ 47,431.46

\$ 38,707.00

\$14,250.00
6,043.26

\$ 8,206.74

TABLE VI UNIVERSITY OF MARYLAND SCHOOL OF LAW

STATEMENT OF RECEIPTS AND EXPENDITURES FOR BIENNIIUM ENDING SEPTEMBER 30, 1930

RECEIPTS:

| | |
|---|--|
| Cash Balance October 1, 1928..... | |
| Students' Fees..... | |
| State Appropriation Account Maintenance..... | |
| Interest on Deposits..... | |
| Discount—Vouchers Payable..... | |
| Sundry Receipts..... | |
| Duplicate Diplomas..... | |
| Contingent Fund—Transferred from Central Office and School of Business Administration..... | |
| Total Receipts..... | |

| Receipts 1928-29 | Receipts 1929-30 | Total Re- ceipts for Biennium |
|---------------------|---------------------|-------------------------------------|
| \$46,832.92 | \$24,274.00 | \$46,832.92 |
| 32,430.00 | 9,711.15 | 56,704.00 |
| 163.15 | 88.76 | 251.91 |
| | 13.69 | 13.69 |
| | 20.00 | 20.00 |
| | 1.00 | 1.00 |
| | 1,100.00 | 1,100.00 |

\$114,634.67

188

EXPENDITURES:

Capital:

| | |
|---|--|
| Office Equipment..... | |
| Educational, Vocational and Recreational Equipment..... | |

| Expenditures 1928-1929 | Expenditures 1929-1930 | Total Ex- penditures for Biennium |
|---------------------------|---------------------------|---|
| \$19.80 | \$20.81 | \$40.61 |
| 1,932.24 | 1,775.36 | 3,707.60 |

Operating:

| | |
|--------------------------------------|--|
| Salaries and Wages..... | |
| General Repairs..... | |
| Light, Heat, Power and Water..... | |
| Traveling Expenses..... | |
| Transportation..... | |
| Communication..... | |
| Other Expenses..... | |
| Office Supplies and Stationery..... | |
| Printing..... | |
| Household, Laundry and Cleaning..... | |
| Insurance..... | |
| Fuel..... | |

| | | |
|-----------|-----------|-----------|
| 48,362.50 | 34,637.50 | 83,000.00 |
| 102.91 | 86.68 | 189.59 |
| 379.40 | 430.33 | 809.73 |
| 2.48 | 166.12 | 168.60 |
| 145.08 | 137.98 | 283.06 |
| 421.85 | 498.50 | 920.35 |
| 1,505.52 | 998.50 | 2,504.02 |
| 227.51 | 71.98 | 299.49 |
| 269.35 | 182.85 | 452.20 |
| 158.62 | 106.33 | 264.95 |
| 77.41 | 72.47 | 149.88 |
| 337.85 | 455.31 | 793.16 |

TABLE VI—*Continued*

UNIVERSITY OF MARYLAND SCHOOL OF LAW

STATEMENT OF RECEIPTS AND EXPENDITURES FOR BIENNIIUM ENDING SEPTEMBER 30, 1930

EXPENDITURES—Continued

Special Funds:

Petty Cash

| Expendi- tures 1928-1929 | Expendi- tures 1929-1930 | Total Ex- penditures for Biennium |
|--------------------------------|--------------------------------|---|
| \$4,026.00 | \$50.00 | \$50.00 |
| | 4,026.00 | 8,052.00 |

189 *Transferred Funds:*

Central Office and Library—Assessment of School

Total Expenditures

\$101,685.24

*Cash Balance September 30th, 1930

\$12,949.43

*Cash balance September 30th, 1930, includes students' fees collected during and prior to September, applicable to year 1930-31

\$10,822.50

TABLE VII
UNIVERSITY OF MARYLAND SCHOOL OF BUSINESS ADMINISTRATION
STATEMENT OF RECEIPTS AND EXPENDITURES FOR BIENNIUM ENDING SEPTEMBER 30, 1930

RECEIPTS:

| | Receipts 1928-29 | Receipts 1929-30 | Total Re- ceipts for Biennium |
|-----------------------------------|---------------------|---------------------|-------------------------------------|
| Cash Balance October 1, 1928..... | \$390.98 | \$..... | \$390.98 |
| Students' Fees | 15.00 | 30.00 | 45.00 |
| | <u>\$405.98</u> | <u>\$30.00</u> | <u>\$435.98</u> |

EXPENDITURES:

| | Expenditures 1928-1929 | Expenditures 1929-1930 | Total Ex- penditures for Biennium |
|---|---------------------------|---------------------------|---|
| Other Expenses | \$4.50 | \$4.50 | \$9.00 |
| Contingent Fund—Transferred to School of Law..... | | 426.98 | 426.98 |
| Total Expenditures | <u>\$4.50</u> | <u>\$431.48</u> | <u>\$435.98</u> |

NOTE: The School of Business Administration, under contract with Johns Hopkins University, effective in June, 1926, was discontinued by the University of Maryland. Under stipulations in said contract certain of the former students then enrolled, on the completion of work required at the Johns Hopkins University and so certified by that institution, became eligible for Certificates and Degrees to be conferred by the University of Maryland.

The plan thus entered into extended from June, 1926, to June, 1930, hence the need for continuing this account.

TABLE VIII

UNIVERSITY OF MARYLAND CENTRAL OFFICE AND LIBRARY
STATEMENT OF RECEIPTS AND EXPENDITURES BIENNIIUM ENDING SEPTEMBER 30, 1930

RECEIPTS:

| | | | |
|---|---------------------|---------------------|-------------------------------------|
| Cash Balance October 1, 1928 | Receipts 1928-29 | Receipts 1929-30 | Total Re- ceipts for Biennium |
| State Appropriation Account Maintenance | \$317.93 | \$20,000.00 | \$317.93 |
| Discount—Vouchers Payable | 20,000.00 | .78 | 40,000.00 |
| | | | .78 |

Transferred Funds:

| | | | |
|--------------------------|----------|----------|-----------|
| From School of Medicine | 6,039.00 | 6,039.00 | 12,078.00 |
| From School of Dentistry | 4,575.00 | 4,575.00 | 9,150.00 |
| From School of Pharmacy | 3,660.00 | 3,660.00 | 7,320.00 |
| From School of Law | 4,026.00 | 4,026.00 | 8,052.00 |

| | | | |
|----------------|-------------|-------------|-------------|
| Total Receipts | \$38,617.93 | \$38,300.78 | \$76,918.71 |
|----------------|-------------|-------------|-------------|

EXPENDITURES:

Capital:

Office Equipment

Operating:

| | | | |
|--|-----------|-----------|-----------|
| Salaries and Wages | 33,672.50 | 32,476.52 | 66,149.02 |
| General Repairs | 28.32 | 46.93 | 75.25 |
| Communications | 317.73 | 317.71 | 635.44 |
| Office Supplies and Stationery | 503.05 | 630.23 | 1,133.28 |
| Printing | 272.75 | 272.00 | 544.75 |
| Insurance | 574.36 | 481.30 | 1,055.66 |
| Special Administrative Expenses | 692.05 | 1,545.86 | 2,237.91 |
| Contingent Fund—Transferred to School of Law | | 673.02 | 673.02 |

| | | | |
|--------------------|-------------|-------------|-------------|
| Total Expenditures | \$36,366.11 | \$36,591.67 | \$72,957.78 |
|--------------------|-------------|-------------|-------------|

Cash Balance September 30, 1930

\$3,960.93

UNIVERSITY OF MARYLAND

OFFICIAL PUBLICATION

Vol. 30

March, 1933

No. 3

BIENNIAL REPORT
of the
UNIVERSITY OF MARYLAND
and
STATE BOARD OF AGRICULTURE



UNIVERSITY OF MARYLAND

OFFICIAL PUBLICATION

Vol. 30

March, 1933

No. 3

BIENNIAL REPORT

of the

UNIVERSITY OF MARYLAND

and

STATE BOARD OF AGRICULTURE

Including a summary of the work and needs of the University of Maryland, the Agricultural Experiment Station, the Extension Service, the State Board of Agriculture, and other branches of work under the jurisdiction of the University and State Board of Agriculture.



Issued monthly by the University of Maryland at College Park, Md. Entered
as second class matter under Act of Congress of August 24, 1912

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LETTER OF TRANSMITTAL

*His Excellency, Governor Albert C. Ritchie,
and the General Assembly of Maryland,
Annapolis, Maryland.*

Sir and Gentlemen: The Board of Regents of the University of Maryland and the Maryland State Board of Agriculture herewith render a report of the work of the several departments under their jurisdiction for the last two years.

Very truly yours,

SAMUEL M. SHOEMAKER.

*Chairman, Board of Regents of the University of Maryland and the
State Board of Agriculture.*

December 30, 1932.

Biennial Report

*Hon. Samuel M. Shoemaker, Chairman, and Members of the
Board of Regents of the University of Maryland,
and the State Board of Agriculture:*

Gentlemen: I have the honor to submit report for the biennium ending September 30, 1932. The main branches of work are discussed briefly and sometimes in detail on the following pages.

The main effort during the past two years has been to adjust all branches of the work to the economic situation and to prevent the lowering of standards of essential services. In this effort, I believe, we have been reasonably successful. It must be admitted that we are confronted by great difficulties. Instead of reducing our work, the depression has increased it. Many young people who normally would be employed for wages are, instead, continuing their education. The effect of unemployment in increasing the desire for university training is readily understood. It is not so easy to understand how private resources are found to make it possible for more and more young people to attend the university. It is well known that this often involves great sacrifices in the homes.

The total enrollment at College Park, (not including the Summer Session and Short Courses) two years ago was 1,571. It is now 1,933, an increase of 23 per cent. This increase is being cared for without a corresponding increase of teachers. Members of the staff are working harder and without extra pay, thus reducing the cost per unit. In Baltimore where there are some limits on enrollment, the increase during the biennium was from 1,445 to 1,491, or 3 per cent. The Baltimore schools are supported almost entirely by fees paid by students. By reason of the fine co-operation of the faculty it has been possible to absorb the increase of enrollment thus far, and some further increase can be cared for, if necessary, in several of the departments.

No efforts are being made to expand the scope of work being done in the University, which always has been held down by reason of a conservative policy and limited resources. Some minor changes are made from time to time to accommodate the shifting needs of the student body. Usually this means an increase at one point which is offset by a decrease elsewhere.

The need for research work and for Extension work also is increased

by reason of the conditions of the day. Especially is this true in agriculture. While many of the old problems are still with us, the Experiment Station is giving more attention than usual to studies relating to agricultural economics. The Extension Service is functioning along the usual lines but it is giving special attention to the readjustment of farming plans. This readjustment has become necessary on a great many farms on account of changes in costs of production and changes in prices of products. There is more pressure than ever before for information that will enable farmers to reduce the unit cost of production. There is more emphasis also on quality of products and on the advantages that come when groups of farmers combine to grade and standardize their offerings.

The work of the State Board of Agriculture, the Forestry Department and the office of the State Geologist proceeds along the usual lines, which are quite definitely established by legal enactments.

The financial reports show again that the biennium closed without a deficit. This record has been accomplished even after the return of approximately \$100,000 to the State Treasury in accordance with request from the Governor of the State. The items returned to the Treasury are equivalent to 8.9 per cent of the total State appropriation of \$1,119,249.09 for the University of Maryland and its allied activities for the year, and are as follows:

| | |
|---|--------------------|
| From the College Park Branch | \$28,040.39 |
| From the Baltimore Schools | 9,775.00 |
| From the Forestry Department | 4,022.40 |
| From the Geological Survey | 5,801.32 |
| From the State Board of Agriculture | 51,957.95 |
| Total | \$99,597.06 |

In comparison with other State universities, this institution shows a relatively large percentage of maintenance to be provided by fees paid by students. As already stated, the student fees constitute the main part of the support funds in the professional schools in Baltimore. Students coming from Maryland and the District of Columbia to College Park contribute \$125 per year towards the educational and overhead expenses of the institution. Those from other States pay \$125 additional, or a total of \$250. Further additional charges are paid by a considerable number of students from other States who come to College Park for pre-Medical and pre-Dental work. It is interesting to note that the number of Maryland young people who attend Land Grant institutions in other states is almost exactly the same as the number from other states who come to College Park to attend what might be

called the Land Grant branch of the University. Further more, those who come here generally pay more than the Maryland students pay in other states. It is actually possible for a Maryland student to receive an education in a Land Grant institution in another state for less than he must pay in his home State.

In some comparable institutions in other states large required fees are announced, but further inquiry reveals the fact that there is a liberal plan of giving free scholarships such as does not obtain in the University of Maryland.

While the support given by the taxpayers of the State towards the maintenance of the University of Maryland is deeply appreciated, it is not amiss to point out that according to recent reports issued by the United States Office of Education, the amount paid from the State Treasury on the basis of population of the State, or on the basis of payments made by students towards their own education, is exceedingly low in Maryland as compared with practically all other states. It would be expected, therefore, that salaries in the University of Maryland are comparatively low and teaching loads are comparatively high, which is the case.

The new buildings which were constructed during the biennium include the following, with actual cost of construction as indicated:

At College Park:

| | |
|-------------------------------------|--------------|
| New Power Plant | \$216,140.10 |
| Library Building | 207,786.06 |
| Horticulture Building | 149,705.45 |
| Engineering Building Addition | 91,632.51 |
| Dormitory for Women..... | 175,676.61 |
| Men's Field House | 181,233.44 |
| Women's Field House | 41,872.99 |
| Todd Laboratory Addition | 30,489.00 |

At Baltimore:

| | |
|---------------------------|------------|
| Law School Building | 200,000.00 |
|---------------------------|------------|

Plans for the new University Hospital, which was provided for by the last Legislature, are practically complete. A class room and recitation building is greatly needed at College Park and additional land for agricultural purposes is urgently needed. Other buildings needed include both dormitories and instructional buildings.

It is a pleasure to give credit to the officers of the University and of the State Board of Agriculture and to the staff members for the high

quality of work which they are doing and with the best of spirit. Difficulties are being encountered frequently but they are met with understanding and courage. There seems to be a deep-rooted feeling that the work of the University of Maryland and the work of the State Board of Agriculture are vital to the interests of the State and that all this work must be performed with great accuracy and diligence. It is safe to say that this spirit will continue.

The statement immediately following has been prepared as a partial answer to the question as to the actual value of the services of the University of Maryland and the Board of Agriculture.

Respectfully submitted,

R. A. PEARSON,

December 30, 1932.

President and Executive Officer.

SOME OF THE VALUES OF THE WORK OF THE UNIVERSITY OF MARYLAND AND THE STATE BOARD OF AGRICULTURE

Early in 1932 the chief administrative officers of the University were asked to prepare estimates of the value of the several lines of work carried on and services rendered by their respective departments. It was realized that only a portion of the estimates could be expressed by monetary standards. The chief purpose of the institution is the training and development of citizens of the State and Nation. Such training has a distinct economic value, both to individuals and to society as a whole, but these benefits cannot be stated in concrete terms. The value to a community of a physician, trained to alleviate human suffering and to save lives, transcends monetary standards. The same may be said of the training of engineers, pharmacists, dentists, lawyers, farmers, business executives, and a trained personnel for the many other professions and pursuits, the combined success of which makes up the well-being of people individually and of the country as a whole.

Likewise, there can be no accurate estimate made of the money value of extension work with farmers and their families. Educational efforts which result in more contented farm families and furnish encouragement and produce leadership, as in the case of boys' and girls' club work, are beyond estimate in tangible terms.

There can be no doubt that the cash values derived from a certain few services of the University of Maryland and its affiliated departments amount to several times as much annually as the funds expended to maintain the entire institution: the intangible values I have men-

tioned are in the nature of a net profit on the investment. The reports submitted by the administrative officers amply support this statement.

In some cases, the benefits increase as the years go by and the improved methods discovered, recommended and demonstrated become more generally adopted; in other cases, measures are designed to meet an emergency, or unusual conditions, and most of the benefit of the work is realized in a comparatively short time. In presenting a few examples of tangible values, no attempt is made to mention them in the order of their importance. Nor is an attempt made to allocate credit for the achievements mentioned, as in many cases, indeed in most cases, the ultimate accomplishment is the result of combined efforts of persons in two or more departments or divisions. Knowledge gained by research, for example, becomes of definite value only when disseminated and put into effect, which is the special function of extension work. On the other hand, the basic knowledge essential to effective extension work must constantly be supplied by research workers.

Most of the examples cited here are from work in agriculture because in work of such nature fairly definite estimates of cash values can be made. Improved methods in agriculture mean reduction of cost per unit and it should be remembered that these reductions are passed on in large measure to the consumers so that the public generally participates in the benefits that come from better farming methods.

Improved methods of growing wheat, for instance, generally result in increased yields per acre. For this reason objections are sometimes heard that we do not want increased production in these days. On the other hand, is it not an advantage for the farmers of Maryland to be able to produce a crop at as low a cost or at lower cost than farmers elsewhere? If the farmers of Maryland are not given help to meet their problems, then they will be crowded out in the nation-wide and world-wide competition. Farmers can be relied upon as well as producers of other kinds of products to adjust their output to the requirements. The difficulty now is not so much due to over-production as to under-consumption. When farmers are advised how they may reduce their costs and how they may readjust their production, then, not only those farmers benefit but their little trading centers all over the State benefit and these benefits quickly find their way to the larger cities.

Readjustment of farm plans in each state is a big question. In one state, under the leadership of the governor and the legislature, large acreages of marginal land have been taken out of the agricultural columns to be devoted to the more practical purpose of growing trees. In most states, with the aid of the Extension Service, farmers are taking definite steps to bring about readjustment of their production to market demands.

Added Values to Maryland Crops—Corn and wheat account for the major portion of the receipts from the 2,668,000 acres of plowable crop land in the State and they are used here as illustrations of the progress made in adding value to Maryland crops. Average yields per acre of corn for the period 1926 to 1930 were 5.9 bushels greater than when the Experiment Station was established; a comparison of yields per acre of wheat for the same period shows a gain of 7.9 bushels. Thus, in the depression year of 1931 the farmers' income, due to research and extension activities on crops and soils, was greater by more than one and one-half million dollars for corn and more than one and one-fourth million dollars for wheat, than it would have been on the old basis.

Maryland farmers in recent years have had to purchase livestock feeds in greater quantities than is profitable under present economic conditions. Through research and extension activities of the University, the alfalfa crop has been increased since 1921 to two and one-half times its former acreage. This represents a saving of at least \$600,000 annually in feed bills. New crops, such as soybeans, lespedeza, and winter barley, have been investigated and introduced into the farming system of the State where they are practicable.

Maryland millers are now producing flour for the pastry trade from more than one million bushels of home-grown wheat. Chemical and baking tests made at the University indicate how Maryland wheat flours may be made the equal of any pastry flours produced anywhere in the United States. Several million bushels of Maryland-grown wheat are shipped annually to Southern millers, and this trade is increasing. A new variety of wheat is in process of development on our agronomy plots, which probably will greatly promote this enterprise.

Contributions to the Dairy and Livestock Industries—Those in charge of the various lines of work associated with production and marketing of livestock and dairy animals and their products estimate that results of the work may be valued conservatively at more than one million dollars annually in the two industries. Following are some of the items:

Since practically all the milk produced in Maryland is marketed in fluid form, and since it is advisable that dairymen raise their own calves for replacement, it is very important that suitable and economic methods be developed for rearing calves with limited amounts of whole milk. The Experiment Station has shown how to raise calves to six months of age on milk substitutes at costs as much as \$12.30 less than on whole milk. The saving depends upon the prices of milk and milk

substitutes. It is safe to assume that 10 per cent of the 48,000 calves in Maryland are fed in accordance with methods recommended, and that an average saving of \$10 per calf is realized, or a total benefit of \$48,000 a year.

Experiment Station tests have shown that for dairy farmers who do not grow their own alfalfa hay the feed ration of dairy heifers may be considerably cheapened by the use of an oat by-product from the feed mills. It is conservatively estimated that this information is yielding savings of at least \$40,000 a year.

Experiments with hogs have shown that when a high protein supplement, such as tankage or fish meal, is used in the feed ration, together with corn and minerals, the cost of producing meat is lowered. It is estimated that this knowledge being used on Maryland farms is yielding a saving of about \$120,000 annually.

Other feeding experiments have shown that by selecting sizes and ages of ewes for early lamb production, an amount varying from \$25,000 to \$50,000 annually may be saved to the sheep industry of the State. It is not practicable to estimate to what extent this type of information is used, but it is known that many of the most successful sheep breeders are availing themselves of it.

Other experiments have shown how other equally large and larger financial benefits may be introduced on farms where early lambs are raised. One interesting study has developed methods that should add about \$60,000 annually to the value of lambs coming to the Baltimore market and which are now classed as "culls." Through feeding experiments it was learned that culls for which the farmers received very low prices could be greatly improved by certain methods of care and feeding and in that way not only go to the market with increased weight, but with better quality, which means a higher basic price.

Control of Insect Pests—In 1928 the bean industry was saved at least \$385,000 through advice on bean beetle control, and similar value is rendered each year that this pest is serious. Through the "spray calendar" and through special advice the apple growers of the State are saved at least \$100,000 annually by prevention of damage from the codling moth. In 1930 the average infestation of fruit in the principal commercial orchards was slightly more than 18 per cent, resulting in enormous losses. In 1931 a definite drive was made to reduce this infestation, with the result that it was lowered generally throughout the State to about 6 per cent.

As is well known, Maryland produces large quantities of apples for export. About 80 per cent of the crop is disposed of that way. In the

last few years foreign governments have been more and more particular in rejecting fruit that showed even slight traces of spray materials, which have to be used to control serious insect pests. New spray procedures have been worked out as a result of extensive experiments and observations by trained entomologists in the Experiment Station, with the result that many thousands of dollars have been saved to shippers in the preparation of their fruit for export, and indeed the export market itself has been saved to many shippers. The money value of the savings in the preparation of fruit for market is at least \$30,000 annually and the money value of retaining the foreign markets is beyond estimate.

It is impossible to state in dollars the value of the inspection service to the nursery industry of the State. Annual gross sales of this industry amount to more than two and one-half million dollars. The inspection service aids Maryland nurserymen to conform with the laws of various states and thus facilitates interstate trade. It protects buyers from purchasing infested and unhealthy plants, assists growers in producing clean, healthy plants, and prevents unwarranted spread of injurious insects. The following case is typical of the saving: More than 6,000 unsalable boxwood plants, valued at from \$2 to \$15 each, were treated according to advice from the entomologists at a cost to the owners of \$600, with a saving to the owners of at least \$10,000 to \$15,000.

Based upon official reports from New Jersey on the cost of control of the Japanese beetle and costs of complying with quarantine regulations, conservative estimates indicate that the protective and control policy practiced in Maryland has the following value for each year the industries in the State have been protected: Nurserymen and florists, now under quarantine (saving of business and reduction in cost of operation), \$150,000; nurserymen and florists, not under quarantine (saving of business and reduction in cost of operation), \$88,000; sand and manure dealers (saving in fumigating costs), \$4,500; fruit growers (saving of the cost of one extra spray), \$240,000; sweet corn industry (saving in cost of control), \$88,000.

Service to Horticultural Industry—The total value of the horticultural products of Maryland is approximately \$28,000,000 annually. Through its research, teaching and extension activities, the University is rendering a wide variety of services to this great industry. They include methods for maintaining and improving soil fertility, improvement in the quality of products, lowering the cost of production, improvement in the vigor, longevity and productiveness of plants, and many other phases of the problems incident to raising and marketing

fruits and vegetables. Variety tests have proved of inestimable value to the fruit industry and have prevented many costly mistakes in planting; plant breeding work has resulted in better commercial types, more disease-resistant varieties, earliness, and combinations of other desirable characteristics. Thousands of acres of apple orchards have been made productive and profitable as a result of facts discovered and demonstrated regarding pollination. Studies in the pollination of peaches, cherries, grapes, and greenhouse vegetables have also given results of great practical value. Adoption by growers of improved practices of pruning and thinning fruits and vegetables has been a tremendous factor in the development of the horticultural industry. No one can tell how much wealth such work brings into the State—and all the people share in the benefit.

Poultry Industry Is Served—During the last few years the poultry industry has been one of the principal sources of income for a large percentage of Maryland farmers and the contributions of the University to this industry have been an important factor in its welfare. Savings through simplified design of poultry houses, more simple, economic rations, disease prevention, together with extra earnings from improved methods of management, are believed by those in charge of the work to have an annual value in the neighborhood of \$900,000.

Saving in Farm Buildings—Early in 1930 standard dairy barn plans were prepared. They were designed especially for economy of construction and were approved by city Boards of Health. About 200 barns have been built according to these plans and \$400 per barn is a conservative estimate of the saving in cost, or a total of \$80,000. Plans for many types of farm structures and equipment have been drawn and about 1,000 of them have been sent to Maryland farmers on request, and to contractors and material dealers. Large savings have resulted, without doubt, but the amount cannot be estimated. During the last twelve years approximately 500 acres of farm land have been drained according to individual surveys and plans made by specialists at the University. This improvement has added to real estate values not less than \$20,000.

Economic Problems—Economic problems affecting the agricultural industry have assumed increasing importance for a number of years. With a view to assisting in the solution of these problems and providing a sound basis for recommendations for desirable adjustments in Maryland agriculture, extensive studies have been made.

In 1923 a study was made of the marketing of wheat in Maryland. This study, according to the Maryland Farm Bureau Federation,

resulted in an indirect saving to the farmers of \$1,000,000. The farmers were about to erect a large elevator in Baltimore in competition with the export elevators there. The study showed how economically wheat was being handled in Baltimore by the large elevators and also that only 25 per cent of Maryland wheat goes to Baltimore. The farmers' elevator was not constructed and a large unnecessary expense was avoided.

A conservative estimate of the value of a study of roadside markets is \$10,000 annually, and of a study of the economies of the canning industry is \$20,000 a year. Similar studies of the supply and distribution of Maryland strawberries are valued at \$10,000 a year.

In recent years considerable attention has been given to analysis studies of farms with a view to assisting in the intelligent planning and organization of the farm operations. Such analyses have been made of 540 farms. At the conservative valuation of \$100 a farm, this work has an annual value of \$54,000. Plans and farm layouts that were made for 127 farms have an additional value of at least \$12,000 a year. An effort to work out a more equitable leasing contract, which is now in progress, should be worth at least \$10,000 annually to the farmers of the State. Other work now in progress involving the supply and distribution of Maryland tobacco and other products is certain to result in great savings and value to the several lines of farming directly interested and to the State as a whole.

Engineering—No funds have been appropriated for engineering work other than training young men. However, through co-operative arrangements, particularly with the State Roads Commission of Maryland, and the United States Bureau of Public Roads, it has been possible to make some exceedingly valuable contributions.

Traffic maps prepared by the Engineering College and later adopted by the State Roads Commission have served as a helpful guide to the proper expenditure of several millions of dollars. Results of work done in the investigation of concrete have been immediately productive of better control of the extensive outlays made for that class of construction. A manual written by a member of the engineering faculty for the use of bridge inspectors of the State Roads Commission gives the latest time- and money-saving suggestions for use in their important work. The worth of such services to the State Roads Commission is difficult to evaluate, but when it is realized that bridge work, including grade crossing eliminations, amounting to \$2,000,000 to \$4,000,000, has been undertaken annually, it can be appreciated that this work is of immense financial benefit to the State.

Likewise, there is no standard of measurement whereby the benefits

derived from the Volunteer Firemen's Short Course may be estimated. This course is held annually and the attendance is increasing. Its value in saving property and lives is, in effect, a form of most effective fire insurance at an extremely low premium.

In co-operation with other agencies, night mining classes were organized at various points in 1923 and have been conducted continuously since that time. The Maryland Bureau of Mines states: "From statistics at hand on increased earnings of men who have attended the night mining classes and have later received promotion, the increased earnings are conservatively estimated at \$54,000 per year. What is of greater importance is the further fact that in six years not a fatal accident occurred among men enrolled in the night classes."

Other Activities.—It is evident that the specific instances mentioned are merely examples of the multitude of activities carried on and services rendered by the University of Maryland and its affiliated branches. There are others from which the people of the State are realizing even greater benefits than some of those above mentioned. The contribution made by the University and its workers to various types of organizations cannot be determined. In many cases the leadership developed by the University has enabled organizations to grow and function along profitable lines.

No special mention has been made of the control of animal diseases, which not only has an immense economic value in the saving of valuable animals and food products, but safeguards the health and lives of human beings, as well, by lessening the menace of tuberculosis and other communicable diseases. The plan for control of hog cholera developed in Maryland has resulted in reducing the loss due to that disease from 70 hogs per 1,000 before the work started to approximately 17 hogs per 1,000 for recent years. Similar progress is being made in the control of other livestock diseases, including those attacking poultry. Five Maryland counties have been classed by the United States Bureau of Animal Industry as modified accredited areas, which means that tuberculosis infection has been reduced to one-half of one per cent. Other counties can soon be included in this classification. Infection in some of the larger milk-producing counties has been reduced from a high percentage to two per cent or less.

No estimate is made of the value resulting from development of wilt-resistant varieties of tomatoes, which have greatly reduced losses from disease on thousands of acres in Maryland. A wilt-resistant variety of peas, known as "Alaska," also has been developed in the University and thoroughly tested, and now is ready for similar service. Discoveries in the life histories of fruit-rotting fungi, apple and wheat

scab, corn root rot, tomato, tobacco and potato mosaic, and other plant diseases, have led to new ways of combatting these destructive diseases. By means of demonstrations these methods have been brought into general use by a large percentage of the growers of the several crops and are resulting in tremendous savings each year.

The regulatory work in feeds, fertilizers and limes protects the people of Maryland from deception and fraud in the purchase annually of at least \$15,000,000 worth of those materials. In view of the fact that the protection is not only against loss of money expended for these materials, but also against loss of the crop increment expected from their use, the value of this service runs into millions of dollars annually. A similar service is rendered in protection against impure, inferior or worthless seed. Without such regulatory work in Maryland, this State would be the dumping ground for all kinds of low-grade fertilizers, seeds, etc., for other States maintain strict supervision.

Student Life

H. C. BYRD, *Vice-President*

STUDENT life on the campus, in the fraternities, and in private boarding houses, although subject in recent years to rapidly changing conditions and many varied difficulties, has progressed to a stage where it now seems to be eminently satisfactory. In the management of any group of approximately two thousand men and women it is to be expected that difficulties and problems will be encountered, but, even in consideration of this, the situation in regard to student life is very good and apparently on a much better basis than in most other universities.

About 28 per cent of the students live in the dormitories, about 24 per cent in fraternity houses, and the other 48 per cent in private boarding houses and their own homes.

The dormitories for men are overcrowded and as soon as possible this condition should be relieved. A matron has been placed in charge of each of the dormitories and this has proved more than satisfactory, both in improvement in the physical conditions of the dormitories and in the personal behavior of those occupying the rooms. The girls are being well cared for in a new dormitory.

A Student Center has been added, a part of the old Horticultural building having been refurnished for this purpose, which houses the

offices of the student publications, the Religious Work Council and the Maryland Christian Association.

In physical training and athletics the University has worked out a sound plan, now in operation, which needs only additional funds to make it entirely comprehensive. No figures have been compiled for the current year, but last year more than 70 per cent of the total number of students took part in some form of supervised physical training. This is an unusually large percentage to be so engaged.

The work in physical training is closely allied with the general health program of the campus, and the program involves one of the most comprehensive systems in the country. Under the general head of Health come general physical training, general health work, including medical attention, examinations, and nursing, and the clinical duties of the infirmary; and intercollegiate athletics.

This general work dovetails into the College of Education so that teachers fitted for this type of work, who graduate from that college, may go out to the high schools with a knowledge of the management and coaching of inter-high school sports, of general physical education to reach all students, and also with a knowledge which should enable them to help develop a general health program for both high school and community, particularly such a program as would relate to personal hygiene and health, community sanitation, and recreational welfare.

The handling of financial accounts of student organizations is on a very satisfactory basis. Difficulties in this connection have been virtually eliminated. All student funds and accounts are audited by the State Auditing Department. These funds are not, of course, State funds, but by handling them in a business-like way the students get valuable experience in business procedure. The handling of funds in this way also minimizes the possibility of criticism. The student organizations have co-operated splendidly, and more and more each day realize the values derived from this systematic procedure.

Withdrawals of students from the University have hardly run higher than in any other universities of comparable size. Some students withdraw because of lack of finances, others because of poor health and for other varied reasons, but the great cause of student casualties lies either in inability, or failure, to do the quality of work that measures up to the high standards required.

Student activities generally cover a broad range, but are fostered by the University as a part of its educational program, aiming to give various groups opportunities for recreational mental diversions in

fields to which they are most adapted. The varied nature of these may be recognized by mentioning the diversity between, for instance, the Opera Club, the Chess Club, the Dramatic Club, the Engineering Society, the Spanish-American Club, the Women's Senior Honor Society, and so on.

Student conduct in general, while not perfect by any means, is satisfactory. At least, the University does not seem to be afflicted in this respect with some of the difficulties that apparently are causing considerable trouble on the campuses of other institutions.

In making this brief statement about the student body, it seems appropriate to mention briefly the developments among the alumni group. A full-time secretary is giving the alumni information and aid much more consistently and frequently than was possible in previous years.

A monthly publication, known as "The Alumni News," also has been established and is reaching all graduates of the College Park branch of the University. The Alumnus secretary has been active during the current year in forming alumni groups in various localities. This work has met with considerable success and is extending the influence and prestige of the University.

College of Agriculture

DR. H. J. PATTERSON, *Dean.*

THE College of Agriculture comprises eleven departments, some of which have several divisions. Following are the departments: (1) Agricultural Economics; (2) Agricultural Engineering; (3) Agronomy—Crops and Soils; (4) Animal and Dairy Husbandry; (5) Animal Pathology, Bacteriology and Veterinary; (6) Botany, Plant Pathology and Plant Physiology; (7) Farm Forestry; (8) Farm Management; (9) Entomology and Apiculture; (10) Horticulture—Pomology, Olericulture, Floriculture, and Landscape Architecture; and (11) Poultry Husbandry.

The number of departments is one less than was reported two years ago, owing to consolidation of the departments of botany and plant pathology, and plant physiology into one department. This was done in the interest of efficiency and economy.

Each department conducts research and extension projects in addition to regular classroom and laboratory instruction.

Enrollment of students in the College of Agriculture continues to show a small gain, as shown by the following:

| | | | |
|--------------|--------------|--------------|--------------|
| 1928-29..... | 141 students | 1931-32..... | 183 students |
| 1929-30..... | 154 students | 1932-33..... | 192 students |
| 1930-31..... | 169 students | | |

In addition, there are a number of students specializing in agricultural education enrolled in the College of Education. Also, there are a number of students specializing in advanced agriculture enrolled in the Graduate School. About 20 per cent of the teaching of the professors in the College of Agriculture is devoted to graduate courses.

The increased numbers in the College of Agriculture, as in other colleges of the University, increases the demands and responsibilities for higher education. There is no depression in education. To maintain the standards and facilities for instruction and protect the welfare of the larger number of boys and girls in college today without an increase in expense is a serious responsibility and obligation. The youths on the campus in 1933 are just as valuable to society as the students were during any of the past ten years. The college has an obligation at this time to make a critical study of its activities and see that its program is thoroughly efficient. To this end, and to meet the new demands, the faculty of this college has made a careful study of the courses offered, and has revised and eliminated some, consolidated others, and is giving many in alternate years.

The four-year course in agriculture which has been given for many years is arranged so as to permit students in the Junior and Senior years to choose their work with a view to preparation for practical farming, or perhaps for training as specialists in one of the many agricultural sciences, which now has become necessary for most types of agricultural research.

The agricultural curricula are being reorganized so as to allow more latitude in electives and permit students, with the guidance of their advisors, to take the studies which are best suited to prepare them for their life work. These changes will enable students desiring more intensive training in vocational farming to procure it. The latitude given in electives will also enable the students who can spend only one or two years at the University to select the course best suited to their needs and the kind of farming they desire to pursue.

Consideration is being given to establishment of an eight-weeks course in Rural Life, designed for special benefit of the twenty thousand young men and women who are to remain on Maryland farms and who do not have time nor means, and often do not have the necessary preparation, to take a regular collegiate course. These intensive

short courses would be intended to give training in farming, home making and citizenship which will result in a profitable and satisfactory rural life.

The dairy cattle judging team, composed of three students who are specializing in dairy husbandry, won first place in judging dairy cattle at the Eastern States Exposition at Springfield, Mass., in September, 1932. One member of the team, John E. Clark, made the highest score in judging Jersey cattle. They were in competition in this contest with students from ten other Eastern colleges.

Much new equipment and apparatus have been added during the past two years, but much more is needed to maintain the standards desired and to replace that which is worn out or becomes obsolete.

Students of the College of Agriculture maintain a Student Grange, a Horticultural Club, a Live Stock Club, a Dairy Manufacturing Club, and an honor fraternity, Alpha Zeta. Membership and work in these is voluntary and no college credits are given for work done in them. Much of the training obtained thereby is fully as valuable as that received from regularly prescribed courses.

The Student Grange represents the great national farmers' fraternity of the Order of Patrons of Husbandry, and in their work they emphasize "Training for Rural Leadership." They sponsor much deputation work in local granges throughout the State. The Horticultural Club sponsors the horticultural show in the fall and the Live Stock Club sponsors the fitting and showing contest in the spring. Both of these exhibitions are very creditable and worthwhile University functions. They give valuable training and inspiration to the students.

Membership in Alpha Zeta fraternity is chosen from the students in the College of Agriculture after an earnest agricultural motive and executive ability have been demonstrated. This national organization fosters good scholarship, and to that end awards a gold medal to the member of the Freshman class in agriculture who makes the highest record during the year.

Agricultural Experiment Station

DR. H. J. PATTERSON, *Director.*

THE program and progress of Experiment Station work has been given in detail in the Forty-fourth and Forty-fifth Annual Reports, which are available in print.

The value of research conducted, if measured by money, is very great, but many valuable results are more or less intangible and cannot be measured in that way. Results of research have made possible higher standards and a more satisfying rural life. The annual money returns are many times the cost. Most of the real, lasting and substantial advancements made in farming during the past forty years can be traced to the results of research. The Experiment Station research work was called into existence through the Federal "Hatch Act," and was wholly maintained in Maryland by Federal funds for 13 years. It is now supported jointly by Federal and State appropriations. Details as to receipts and expenditures are given in the annual reports of the Station.

During the biennium the Station has issued two annual reports and 15 bulletins covering a total of 700 pages. Contributions of 60 papers have been made to scientific journals and the proceedings of scientific societies. Abstracts of the bulletins are appended herewith. A list of publications pertaining to research in animal pathology is found on page 109.

Unpublished Results

A few of the results which have not been issued through bulletins are of sufficient interest and importance to merit special attention at this time:

1. "Maryland Alaska" pea. This is a new *disease resistant* strain of canning peas which has been developed by the Department of Plant Pathology. It is resistant to the most common pea diseases in Maryland; it is a better yielder and of better quality than the ordinary strains of Alaska. Through the co-operation of the Sioux City Seed Company, 80,000 pounds of the seed of "Maryland Alaska" will be available for 1933.
2. The Horticultural Department has, by selection through a series of years, developed a variety of sweet potato known as "Maryland Golden Sweet." It is about ten days earlier than Bigstem. It

yielded this year 292 bushels per acre under the same conditions given Bigstem, which yielded 180 bushels per acre. It is a rich, golden color, of good quality. It has become very popular on New York markets, where it has brought 25 cents more per bushel than other varieties. One farmer has grown 13 acres of certified seed of this variety this year.

3. The Agronomy Department has developed a new hybrid wheat for the Piedmont area which excels any other variety now available. A new hybrid winter barley with barless awns was produced by crossing "Tennessee Winter" with "Velvet." This variety of barley is probably the most important acquisition in many years. A hybrid sweet corn, known as "Hopeland," originated by the Agronomy Department produces a high yield of canned corn and has other points of merit. Selection for its improvement is being continued.
4. The Agricultural Engineering Department has made good progress in devising and developing an electric dairy utensil sterilizer and an electric milk pasteurizer, which are adapted to the requirements of the small dairyman. This pasteurizer should make it possible for the small dairyman to furnish pasteurized milk.
5. Some tests of stock foods not yet reported through bulletins are of considerable importance. The Poultry Department makes from time to time tests to determine if certain feed components are harmful to chickens. This department also co-operates with the State Feed Inspection Service to determine the vitamin value of poultry feeds containing cod liver products and oils from other sources.

The Animal and Dairy Husbandry Departments have made tests of special interests in studying the relation of fish meal as a feed for cows to the iodine content of milk. Determinations have been made also of the feeding value of a new by-product of an industrial alcohol plant, of ground oat hulls and ground alfalfa hay. Special attention is directed to the use of dried milk powder for calf feeding, as reported in bulletins on this subject.

Seed Inspection

Appreciation of the services rendered by the Seed Inspection laboratory is indicated by the number of samples submitted by farmers for tests of purity and germination. The number of samples examined during the fiscal years ending June 30 are as follows:

| | | | |
|------|---------------|------|---------------|
| 1928 | 902 samples | 1931 | 2,140 samples |
| 1929 | 1,408 samples | 1932 | 1,870 samples |
| 1930 | 1,925 samples | | |

Biological Laboratory

This laboratory operates under a special act and is a division of the Department of Bacteriology and Animal Pathology. It co-operates closely with the Live Stock Sanitary Division of the State Board of Agriculture. It prepares and distributes biologics for use in connection with animal diseases and legume inoculation. The laboratory is also charged with diagnosis of animal diseases. Its activities are shown in part by the following tables.

Laboratory Examinations

Many of these examinations were made on animals and animal materials and were conducted at the Live Stock Sanitary Service and the Biological Laboratories, although a few of them were handled in the laboratory of the Department of Bacteriology.

| <i>Disease Examinations:</i> | 1931 | 1932 |
|---|--------------|--------------|
| Livestock: | | |
| Agglutination tests | 20,044 | 23,989 |
| Other examinations | 1,234 | 1,625 |
| Poultry and miscellaneous birds: | | |
| Agglutination tests | 19,995 | 29,526 |
| Other examinations | 1,222 | 1,428 |
| <i>Feed examinations</i> | 26 | 34 |
| <i>Milk examinations:</i> | | |
| Miscellaneous | 568 | 600 |
| <i>Water analyses</i> | 161 | 202 |
| <i>Blood counts (man)</i> | 21 | 51 |
| <i>Urine analysis (man)</i> | 5 | 23 |
| Total | <hr/> 43,276 | <hr/> 57,478 |

Preparation and Distribution of Biologics

| | 1931 | 1932 |
|---|--------|--------|
| Autogenous bacterins (mils) | 34,405 | 32,690 |
| Tuberculin (mils) | 13,345 | 14,780 |
| Ovarian extract (mils) | 775 | 20 |
| Fowl pox vaccine (doses) | 17,500 | 42,720 |
| Legume inoculum (for bushels of seed) | 8,434 | 4,173 |

Distributed Only

| Anti-hog-cholera serum (mils) | 138,500 | 283,700 |
|-------------------------------------|---------|---------|
| Hog cholera virus (mils) | 540 | 2,220 |
| Miscellaneous articles | 66 | 119 |

Needs for Research

The need of land, greenhouses, laboratories and equipment for research work is pressing in all departments, but particularly great for the proper conduct of the departments of Agronomy, Animal and Dairy Husbandry, and Poultry Husbandry. These needs have been set forth in detail in the annual reports of the Station.

Bulletin 322—A Production and Economic Survey of the Black Raspberry Industry of Washington County, Maryland, by Hugh Ross and E. C. Auchter. 40 pages. A study particularly of the scope of the industry, varieties, cultural practices, problems of production, and costs of production and marketing.

Bulletin 323—Maryland Grasses, by J. B. S. Norton. 76 pages. Brief discussions of the economic importance of certain species, many of them illustrated. Keys are provided for identifying both mature and immature grasses and both common and botanical names are given. Particularly valuable to teachers and others interested in plant identification and classification.

Bulletin 324—Sharp vs. Dull Ice Cream Freezer Blades and Freezing Efficiency, by R. C. Munkwitz and DeVoe Meade. 16 pages. Comparisons as to time required, quality of the cream, and cost of freezing.

Bulletin 325—Miscellaneous Feeding Trials with Poultry, by George D. Quigley and Roy H. Waite. 20 pages. Deals with feeding corn cockle and smut damaged wheat to poultry and tests with feeds suspected of causing mortality in flocks.

Bulletin 326—Effect of Fall Applications of Sodium Nitrate Upon the Color, Keeping Quality and Nitrogen Content of Apples, by W. W. Aldrich. 44 pages. Stayman Winesap, York Imperial, and Rome Beauty were used in the tests.

Bulletin 327—Peach Rejuvenation Studies in Maryland, by A. Lee Schrader and E. C. Auchter. 32 pages. Methods and cultural practices which should accompany treatment of old peach trees involving heavier than normal pruning.

Bulletin 328—The Corn Earworm, Biology and Control, by L. P. Ditman. 40 pages. Results of a study extending over six growing seasons.

Bulletin 329—Corn Silage Production, by J. E. Metzger and R. L. Sellman. 12 pages. Gives data on cost of production, use of silage supplements, and placing of silage corn in a rotation with other feed crops on a dairy farm.

Bulletin 330—Calf Feeding, by M. H. Berry. 18 pages. Four methods of calf feeding are described.

Bulletin 331—Contagious Abortion in Experiment Station Dairy Herd, by L. W. Ingham and DeVoe Meade. 12 pages. Summarizes available information on prevalence, spread and practical control measures. Gives a complete record, beginning in 1908, of the influence of contagious abortion on production, and the effectiveness of isolation as a control measure.

Bulletin 332—Oat Feed as a Substitute for Roughage, by M. H. Berry. 6 pages. Composition of oat feed is given and results of tests comparing its feeding value with other forms of roughage, as shown by gains made by the groups of animals fed.

Bulletin 333—Fertilization of Early Potatoes, by J. E. Metzger and E. H. Schmidt. 14 pages. Deals with sources of nitrogen in a fertilizer mixture, the value of green manure as a supplement to commercial fertilizers, comparison of forms and rates of application of potash, rates of application of a potato fertilizer, and use of concentrated fertilizers.

Bulletin 334—The Poultry House Floor, by Roy H. Waite. 16 pages. Results obtained with a cement floor built on straw for insulation against moisture. Also deals with equalizing effect of cement floors on poultry house temperatures.

Bulletin 335—The Vegetative Propagation of Plants, by F. E. Gardner. 34 pages. Especially for amateur plantmen. Describes conditions under which vegetative propagation may be done and covers such items as the rooting media, moisture and temperature requirements, physiological condition of the cutting wood, and types of cuttings. Special emphasis is given propagation of ornamental plants and a section is devoted to fruit bearing plants.

Bulletin 336—Feeding wheat to Fattening Hogs, by B. E. Carmichael. 42 pages. Wheat, both whole and ground, is compared with corn in various rations, including different supplements, such as minerals and pastures.

College of Arts and Sciences

DR. T. H. TALIAFERRO, *Dean.*

ENROLLMENT in the College of Arts and Sciences has continued to increase, in spite of higher entrance requirements and higher quality of work demanded of students. Under-graduate enrollment was 625 in 1929-30; 643 in 1930-31; and 770 in 1931-32. Apparently there will be a further considerable increase in the year 1932-33. Some of the reasons for increased enrollment, other than might be expected normally, are the moderate charges here as compared with other institutions, and the depression in almost all industrial and commercial activities.

The increase in number of students in the other colleges of the University has also necessitated additions to the teaching staff of the College of Arts and Sciences, as some 50 per cent of the credit courses offered in the other colleges are taught by members of the staff in Arts and Sciences. Although a number of teachers have been added from year to year, the force is still inadequate and the number of students in a section is too large to insure best results. Difficulties as to size of sections were confined principally to freshmen classes in

past years, but with the growth of the institution the same problem has arisen in the upper classes where the solution is often more difficult.

Graduate courses given by the Faculty in Arts and Sciences are growing in importance through the increase in number of graduate students. Night classes for graduates in chemistry, given at College Park and in Baltimore, continue and seem to meet a real need. These courses pay for themselves.

Sixteen members of the Faculty of Arts and Sciences (either whole or part-time) are detailed for teaching in the School of Dentistry and School of Pharmacy in Baltimore. The work is under the direction of the heads of the respective departments of this college and is functioning in a highly creditable manner.

The vocational side of an education has its value, but it is certainly becoming more and more apparent to the thinking person that the phase of education pertaining to living a full life has as great or possibly greater value. The College of Arts and Sciences, while it has of necessity a vocational element in its training, lends itself peculiarly to this other phase of education and for this reason the work of the college has a quality of great value at the present time, which will become more valuable as the years progress.

During the biennium the members of the staff have, as usual, prepared and published a number of bulletins and other articles. In addition, Drs. Homer C. House and Susan E. Harman have published "A Descriptive English Grammar," which has already reached a second edition, and Dr. Charles B. Hale (jointly with Professor Tobin) "Contrast and Comparison." Dr. A. E. Zucker has published a French translation of his "Life of Ibsen"—"La Vie d' Ibsen"—and has edited Thomas' Lokalbahn.

Funds are needed for adequately equipped teachers and researchers if best results are to be attained. Funds are also needed for equipment and books and for providing space in which to work. The situation is much better than it was in the past, but there is a real need for the erection of a teaching building; for establishing departments of music, art, and journalism; for further development of courses already established; and for providing a sufficient number of teachers of superior training. It is impossible to estimate what can be done under present conditions toward the attainment of these aims, since present economic conditions demand retrenchment wherever possible. It is hoped, however, that in the near future conditions will justify the assignment of funds for these purposes.

The report for "Feed, Fertilizer, and Lime Inspection Service" is found in another section of this report. (See page 78.)

College of Education

DR. W. S. SMALL, *Dean.*

THIS report reviews briefly the salient features of the last report and indicates progress made in the biennium just closed.

The College of Education was established to prepare high school teachers, vocational teachers, high school principals and supervisory and administrative officers. In the field of elementary education its function is to supplement the work of the normal schools by providing opportunity for post normal work in preparation for positions as elementary school principals, special teachers, helping teachers and supervisors. The College includes six functional divisions: General Education, Arts and Science Education, Agricultural Education, Home Economics Education, Industrial Education, and Physical Education (separate departments for men and women). Physical Education has been added within the past biennium. The Summer School, although organically distinct from the College of Education, is administered by the Dean of the College of Education and is, in fact, an administrative division of that College.

Growth in Numbers

It was shown in the last biennial report that there had been a continuous increase in enrollment since the College of Education was established in 1918. The biennium just ended shows an acceleration of increase.

| Enrollment | 1929-30 | 1931-32 | Dec. 1, 1932 |
|---|---------|---------|--------------|
| Students in regular session..... | 137 | 182 | 210 |
| Students in Industrial Courses (Baltimore) | 175 | 177 | 199 |
| Students in Summer Session | 745 | 1,033 | ..... |

In addition to the 210 students registered in the College of Education, 93 students registered in the Colleges of Agriculture, Arts and Sciences and Home Economics are pursuing curriculums in the College of Education. Thus, there are actually 303 students under the supervision of the College of Education, or 83 more than in 1930. Of these 67 are seniors.

Further, there are this year 22 graduate students in Education as against 11 in 1930.

Services Rendered

Since its establishment in 1918 approximately 400 students have been graduated, eligible for State certification as high school teachers. About 80 per cent of these have been graduated since 1924. Of this 400, approximately 250 have been employed in Maryland High Schools. At present, 152 are so employed, or 32 more than in 1930. The number of high school principals has been increased by eight within the biennium. Many of our graduates are teaching in other states; some have continued their studies in graduate schools and have found their way into college positions or scientific work; a good many, especially before 1930, migrated from teaching into other lines of work; marriage accounts for the disappearance from teaching of many of the women graduates.

The Department of Agricultural Education and Rural Life is continuing its service of preparing teachers of Vocational Agriculture and of offering courses for other forms of rural leadership. Eight of the present county agents were trained as teachers of Vocational Agriculture and served as such teachers two or more years each. The enrollment in Vocational Agriculture which was somewhat excessive in the last biennium is tending to adjust itself to the needs of the State. There is some increase in the demand for graduate work in the regular session.

In the Department of Home Economics Education there has been no marked change except that a beginning has been made in offering graduate courses in the Summer Session.

The work of the Department of Psychology has developed to a point where the burden of teaching is excessive for one instructor. In the present semester the teaching load aggregates 738 student hours—246 individual students. The professor in charge has also the exacting duty of giving, scoring and interpreting the freshman psychological examinations.

Since 1924, the Master's Degree has been conferred upon 32 graduate students in Education. Of these, 28 were teachers with one or more years of experience; 10 spent a year in residence; 21 did their work on the Summer Session plan. Twenty-four are now employed in the Maryland Public Schools, one as a superintendent, 15 as principals, and eight as teachers.

A systematic program of instruction is carried on in Baltimore for teachers of industrial subjects. This program is designed to meet the needs of the following groups: Candidates for teaching positions; beginning teachers; teachers in service seeking to meet certification requirements; women industrial teachers; night school teachers. In

meeting the needs of these groups, four types of courses are offered: Methods of teaching; professionalized subject matter; shop practice; content courses, such as English and mathematics for shop teachers, American History, Industrial History, Hygiene and First Aid, Tests and Measurements, and Vocational Guidance.

It is impossible to say how many individual teachers have taken advantage of these opportunities. Each year the total enrollment includes a large number who were enrolled in previous years. The number enrolled in these courses on December 1 of the present year is 199. It is safe to say that within the past eight years several hundred individuals have been enrolled.

In connection with this program, provision is also made for industrial teachers in service desiring to work for a degree. A four-year curriculum leading to the degree of Bachelor of Science was set up in 1930. Requirements for this degree may be met in part by the courses offered in Baltimore and in part by Summer School attendance. Fifteen students have now matriculated as candidates for this degree.

This program was designed and has been carried on primarily for teachers of industrial subjects, but it makes a strong appeal also to teachers of all vocational and related subjects—to teachers of commercial subjects and home economics, to teachers of the related subjects in vocational and pre-vocational schools and to those engaged in vocational guidance. Some of the courses now offered are serviceable to these students as well as to the strictly industrial teachers. There is an urgent demand, however, for an expansion of offerings that will meet the needs of this wider clientele—a demand that must be met in the near future.

The Summer Session renders a varied and important service to all classes of teachers and educational workers; to elementary school teachers for renewal or raising of certification, and also to elementary school teachers working for a degree; to high school teachers for renewal of certification and also to high school teachers and principals working for the Master's Degree; to special teachers, attendance officers, principals and supervisory officers. The extent and variety of this service is partly indicated by the attendance at the Summer Session of 1932 of 804 students from Maryland, the large majority of whom were public school teachers. The number of Maryland students in the Summer Session of 1930 was 593. In 1932, there were 204 graduate students of whom 120 were majoring in Education. About 30 more were taking Education as a minor. Three-fourths of the graduate students, therefore, are pursuing Education either as a major or minor. At least 85 of the majors are public school teachers in Maryland. Not all of these graduate students in Education will become candidates for the Master's Degree, but more than one-half of them have indicated their intention of doing so.

Improvements

It is gratifying to report that the urgent need for a "Professor of Physical Education for Men," as set forth in the last biennial report, has been met. We have now both a Department of Physical Education for Men and a Department of Physical Education for Women, which devote roughly, one-half of their time to the teacher training program and one-half to the general program of Physical Education for the University. This enables the College of Education to prepare both men and women teachers of Physical Education. This year approximately 60 students who are pursuing Education curriculums are majoring in Physical Education. In the present senior class there are six women and one man. Inasmuch as the County High Schools generally are too small to employ teachers who give undivided time to any one subject, each student in physical education is preparing also to teach at least one academic or scientific subject.

In the present year, a beginning has been made towards meeting two needs that have been presented in the preceding biennial reports: "a four-year resident curriculum in Industrial Education at College Park" and a "Commercial curriculum open to graduates of commercial departments of high schools who have acquired sufficient mastery of stenography, typewriting and book-keeping." Provisional curriculums in these two fields were worked out last year and are offered this year to students entering as freshmen. Partial provision was made for instruction in Industrial Education by authorization in the budget for an instructor in shop and drawing, in co-operation with the College of Engineering. No provision has yet been made for the methods, courses and practice teaching in either of these fields. Owing to late announcement of these curriculums in the high schools, there were few applicants for admission. An increase may be expected next year, but the exacting conditions of admission will keep the numbers within reasonable limits.

Summary of Present Conditions and Problems

As now organized, the College of Education is equipped to prepare high school teachers of Vocational Agriculture, Vocational Home Economics, Physical Education for Men and Women, and of all academic subjects, except Latin. It is partly equipped to prepare teachers of Industrial Arts and Shop Work, Commercial subjects, and High School Music. No progress has been made in the field of Music Education, except that the Summer Session program has been strengthened appreciably. It is now possible for a student, by combining summer work in High School Music with work of the regular session, nearly to satisfy the requirements for State certification in High School Music.

In Elementary Education the conditions are practically the same as reported in 1930. In the meantime, the State Normal Schools have become three-year institutions. This increases rather than diminishes the need in the College of Education for work leading to a degree in Elementary Education, as the road to a degree is shortened by the additional year in the Normal School. An excellent program of work of post normal character is offered in the Summer Session, but before a degree in elementary education can be offered, the facilities of the Summer Session must be supplemented by work during the regular college year, in a Department of Elementary Education.

On account of staff limitations we have discouraged graduate work in Education, except in the Summer Session. The demand, however, is becoming urgent. This year there are 22 graduate students in Education. The demand will increase. In Washington, after this year, a Master's degree will be required for high school teachers; and in Maryland, on account of the excess in supply of teachers, preference is likely to be given to those who have an extra year of preparation. We have added this year two courses available for graduate students in Education but on account of the demand for under-graduate work it is impossible to expand our graduate program much more with the present staff.

The need for a man in Educational Research and Personnel work is urgent. This need is accentuated by the pressing problems relating to the admission of students to the University and adjustment thereafter.

The need for a University high school, which has been set forth in the four preceding biennial reports becomes each year more insistent in order to economize time of instructors and students and to insure uniformly good conditions for student teaching.

The most urgent problem confronting the College of Education at the present time is limitation and selection of students. It is shown above that there has been a marked increase in the enrollment both in under-graduate and graduate students in Education in the past biennium and especially in the present year. The demand for teachers which, up to 1930, was an expanding demand is now definitely a contracting demand. Sound policy as well as a humane attitude towards prospective teachers requires that the number admitted to the teacher preparatory curriculum should be limited to those who seem to have teaching ability. The selection of those having teaching ability is no easy matter. If it were merely a matter of academic achievement there would be no difficulty but the dear school of experience tells us that other qualities than academic ability are needed for success. This will involve some restriction on academic grounds of those seeking admission as freshmen:

careful and thorough study of the individual students during the freshman and sophomore years; and diversion to other fields at the end of the sophomore year of those who are by reason of scholarship and personality obviously unfit to become teachers. Reduction in number and better selection of those admitted to professional courses in the junior year will at once raise the standard of the work and permit instructors to give more time and attention to developing the capable students.

The Summer School

DR. W. S. SMALL, *Dean.*

THE program of instruction in the Summer School is planned primarily to meet the needs of teachers in service and of students desiring to satisfy the requirements for under-graduate and graduate degrees.

The functions and activities of the Summer Session necessarily have been considered in connection with the report upon the College of Education. This report, therefore, is limited to brief consideration of the enrollment and distribution of students and of the improvements and progress in the last two years.

The following tabulation shows the enrollment and distributions of students for the past five years:

| | 1928 | 1929 | 1930 | 1931 | 1932 |
|-------------|------|------|------|------|-------|
| Men | 205 | 218 | 257 | 338 | 406 |
| Women | 421 | 503 | 488 | 589 | 627 |
| Total | 626 | 721 | 745 | 927 | 1,033 |

Group distribution:

| | | | | | |
|-----------------------------------|-----|-----|-----|-----|-----|
| Undergraduates | 86 | 110 | 126 | 169 | 217 |
| Graduate students | 103 | 130 | 157 | 200 | 204 |
| Elementary School teachers | 343 | 397 | 363 | 447 | 469 |
| High School teachers | 123 | 142 | 181 | 152 | 167 |
| Junior High School teachers | | | | 19 | 21 |
| High School principals | | | | 33 | 26 |
| Attendance officers | | | | | 3 |
| Supervisors | | | | | 5 |
| Miscellaneous | | | | 107 | 125 |

Residence distribution:

| | | | | | |
|------------------------|-----|-----|-----|-----|-----|
| Maryland | 491 | 571 | 593 | 723 | 804 |
| Outside Maryland | 135 | 152 | 152 | 204 | 229 |

The tabulation shows a separation after 1930 of the group "high school teachers" into three sub-groups: high school teachers, junior high school teachers, and high school principals. The numbers in these three groups in 1931 and 1932 are 204 and 214 respectively. The increase in the number of regular college students from 86 in 1928 to 217 in 1932 is noteworthy.

Experience of the past biennium confirms the statement in the past two reports that an increasing number of teacher-students in the Summer Session are matriculating as candidates for degrees. Similarly, there is an increasing number of graduate students—from 157 in 1930 to 204 in 1932. The importance of this phase of the Summer Session work has been covered in the current report of the College of Education; likewise the need of a regular post-normal curriculum in Elementary Education.

The Demonstration High School has been eliminated. The experience of eight summers demonstrated that it was impossible, in our location, to attract a sufficient number of high school pupils to furnish satisfactory classes for observation.

Among the improvements continued or initiated during the biennium are: Further development of a systematic program for music instruction, both for high school and elementary school teachers; further development of graduate courses in various fields; development of a program of summer courses in Industrial Education; beginning of a program of summer courses in Special Education (handicapped children); more courses for regular under-graduate students.

The increased revenues from increased enrollment have made it possible to meet some of the more urgent demands for expansion of the program of courses.

In the last report, attention was called to the fact that the State appropriation, now \$3,500, is the same that it was when initiated 10 years ago, whereas "the enrollment had tripled and the demand for advanced courses has increased from practically nothing to the proportion" indicated in this report and in the report of the College of Education. Grateful acknowledgment is here made of the increase in 1932 of \$1,000 in the allotment from the State appropriation.

The College of Engineering

DR. A. N. JOHNSON, *Dean.*

ENROLLMENT in the College of Engineering has constantly increased since its reorganization in 1920, when 114 students were enrolled. During this biennium it has increased from 320 students in 1930 to 410 students in 1932, an increase of 28 per cent.

The records made by many of the graduates of the Engineering College have been noteworthy and they have received recognition in many of the largest industrial enterprises in competition with graduates from engineering schools in all parts of the country.

An addition to the Engineering Building, erected within the last two years, provides much needed space for taking care of the increased numbers of students, but not yet sufficient for the demands.

This addition is two stories and basement, 57 by 65 feet. It is being used principally by the Electrical Engineering Department, which has the basement floor for a modern, well-lighted laboratory, and also has laboratory space on other floors for illumination, radio and standardization.

Additional space has been provided for extra class rooms, drawing rooms and offices. There is still need for more drawing rooms.

Between the old portion of the Engineering Building and the new wing there has been constructed a one-story structure for a small amphitheater, seating 230. It is the only lecture room on the campus that accommodates conveniently classes numbering 100 to 200 students. The main auditorium is much too large for this purpose, and one of the other class rooms that could seat this number is not well arranged for lecture purposes. The engineering lecture hall is in use by various classes practically every hour throughout the week.

The laboratory in the old portion of the Engineering Building, formerly used by the Electrical Engineering Department, was made available for the Civil Engineering laboratories, where tests for the State Roads Commission are carried on. Thus, it is possible to do this work with much greater facility than formerly.

Some space, although inadequate, is afforded the Mechanical Engineering Department to install pieces of apparatus which had been donated, but could not be erected because of lack of room.

Testing concrete road cores and concrete bridge cylinders has become part of the routine work of the Engineering Laboratory. The State Roads Commission has three crews at work drilling samples for the tests, more than 4,000 cores per year being tested. These tests furnish means for control of construction work that were not before available and give added assurance that the work done is in conformity with specifications, which, in turn, have developed from results of this work.

There were conducted in 1930 and 1931 special investigations of an original character that resulted in determining for the first time the relative capacity of two, three, and four-lane roads, and there is now available some definite information in this important feature of road administration and road use.

At the request of the Maryland State Roads Commission, Professor S. S. Steinberg, Head of the Department of Civil Engineering, prepared, during the summer of 1931, a Field Manual for Bridge Inspectors. This manual shows the best practice in bridge construction and inspection, and in field and office work; it also treats of certain possible emergencies.

The worth of these services to the State Roads Commission is difficult to evaluate, but when it is realized that bridge work, including grade crossing eliminations, amounting to two to four million dollars has been undertaken annually, it is readily appreciated that this work has very definite financial value to the State.

At the suggestion of the Maryland Bureau of Mines, night mining classes were organized in 1923 at various points in the coal mining district of Western Maryland, and have been conducted continuously since then in close co-operation with the Maryland Bureau of Mines, the State Board of Education, and the Boards of Education of Allegany and Garrett counties. Total enrollment of the nine-year period is 2,475.

The Maryland Bureau of Mines states: "From statistics at hand on increased earnings of men who have attended the Night Mining Classes and have later received promotion in their work, the increased earnings are conservatively estimated at \$54,000 per year. What is of greater importance is the fact that in six years not a fatal accident occurred among men enrolled in the Night Classes. Records of the Maryland Bureau of Mines show that the mine accident rate among students is 78 per cent lower than the rate among men not attending the classes." On March 11, 1930, the first fatal accident occurred to a member of the Night Mining Classes and the Short Course for Coal Mine Employees.

As a result of a conference between representatives of the Volunteer Firemen's Association of Maryland and the University, a short course for members of volunteer fire companies throughout the State was organized in the summer of 1930. Enrollment in this first course was 48.

Co-operation of the fire departments of Baltimore and Washington was secured and programs prepared which presented in a practical way topics of immediate interest and value to members of volunteer fire companies.

The second short course was held in the summer of 1931 and the attendance was 110. During the summer of 1932 the third short course for volunteer firemen was held with an enrollment of 91. There were representatives from fire companies in all sections of the State.

The program for the past summer's work was arranged to be progressive with the work of previous years. It is expected that this work will prove but preliminary to development of a fire prevention course at the University, and to a more thoroughly organized effort to reach all volunteer fire companies in the State. The value of this work in prevention and fighting fires is obvious. It is a form of most effective fire insurance for an extremely low premium.

A chapter of Tau Beta Pi, the national honorary fraternity, was established at the University of Maryland in 1929. This recognition created an added incentive for good scholarship. The Engineering College was signally honored by having the national convention of Tau Beta Pi held on the campus during the fall of 1932.

The Graduate School

DR. C. O. APPLEMAN, *Dean*.

ENROLLMENT in the Graduate School has continued to increase. Including those enrolled in night classes and those doing part-time work, there are 246 students pursuing graduate studies during the first half of 1932-33. Of these, 21 are Fellows and 27 are Graduate Assistants. The students enrolled did their Bachelor Degree work in 35 States, the District of Columbia and British Columbia. Their undergraduate work was done at 80 colleges and universities.

During the biennium, 119 advanced degrees were conferred; the following table shows the colleges in which major work was pursued:

| College | 1931 | | | 1932 | | |
|-------------------------|------|------|-------|------|------|-------|
| | M.S. | M.A. | Ph.D. | M.S. | M.A. | Ph.D. |
| Agriculture | 18 | ... | 9 | 20 | ... | 2 |
| Arts and Sciences | 7 | 7 | 3 | 12 | 11 | 1 |
| Education | ... | 5 | ... | ... | 8 | ... |
| Engineering | 1 | ... | ... | 1 | ... | ... |
| Home Economics | 1 | ... | ... | 1 | ... | ... |
| Pharmacy | 6 | ... | ... | 4 | ... | ... |
| Totals | 33 | 12 | 12 | 38 | 19 | 3 |

In recent years there has been considerable shifting in the distribution of graduate students in respect to colleges and departments. Formerly, the largest number of students was in the College of Agriculture, but at present that college ranks second to the College of Arts and Sciences. The number of graduate students in the College of Agriculture has remained fairly constant for the last three years and there have been considerable increases in the College of Arts and Sciences and the College of Education. Most of the graduate students in the College of Education are Summer School students, although there are 22 students taking the major portion of their work in educational subjects during the present academic year.

There are 25, full-time or part-time, graduate students in the School of Pharmacy and five in the School of Medicine. From the time these two Schools offered graduate work, the number of graduate students has increased steadily.

Three regular night courses are offered for which graduate credit is allowed—a chemistry course at Baltimore, and a chemistry course and a course in bacteriology at College Park.

Future Outlook

If the Graduate School is to prosper in efficiency and properly care for the growing demand for graduate work by students even from our own State, certain especially qualified members of the faculty, as conditions warrant, should be relieved of a part of their undergraduate load. Because of the increasing demand for graduate work, the graduate schools have a much greater responsibility than ever before and they must be prepared to assume an increasing burden for some time to come.

Importance of Interests Served

Demand is increasing for men and women who have pursued intensive

graduate study in a restricted field and who are trained in the methods of research and creative scholarship. The Graduate School of the University of Maryland is endeavoring to meet this responsibility and thereby accomplish one of the important functions of an institution for higher education.

Maryland law requires that principals of standard high schools must have at least one year of graduate work. High school teachers must be college graduates and, in addition, one-third or one-fourth of these teachers are required to attend summer school every third or fourth year. Since teachers of this class are already college graduates, their instruction, both in Education and in the subjects they teach, must be of the graduate level. Because of the rising spirit of professionalism on the part of public school teachers, they are demanding even more than the law requires and the demand is increasing each year.

Graduate work equivalent to either the master's or the doctor's degree is required of practically all college and university teachers. The Graduate School trains young men and women for careers as college and university teachers.

Many of the men and women who have received advanced degrees in the Graduate School are now discharging important duties as scientific specialists and experts in agriculture and other industries, in public health laboratories, and in the service of the State and Federal governments.

Because of its proximity to the great library resources of the National Capital and the splendid co-operation of the United States Department of Agriculture, the University of Maryland is in position to offer unusual opportunities for graduate work in agriculture.

One of the requirements for a higher degree is preparation of a thesis or dissertation. A survey of the subjects of graduate research now in progress reveals that a considerable number of students are making studies based on conditions in Maryland and of special interest to the citizens of the state. The following list of studies completed recently, or now in progress, indicates the scope of service rendered:

In the History Department a number of theses are being prepared on various periods in the history of Maryland.

In the Economics Department within the last two years students have made comprehensive studies of "Causes of Business Failures in Maryland Between 1921 and 1929"; "Tax Comparison of Two Maryland Counties"; "Education Costs in Maryland"; and "Road Financing."

In the College of Education a wide range of subjects have been investigated. Among them are "State Support of Higher Education"; "A

Comparison of Requirements for a Bachelor's Degree in the University of Maryland with those of other Universities"; "The Ability of the Maryland High School Graduate to do Satisfactory Work in Various Normal Schools and Universities," and many others.

In the College of Home Economics a study is being made of flours from wheat grown in four different sections of Maryland as to their merits in cake and biscuit making.

Many of the graduate students in the College of Agriculture are assisting with Experiment Station projects. The Graduate School, therefore, supplies valuable assistance at low cost to the Experiment Station. One of the most comprehensive projects is the "Business Analysis Survey" of more than 500 farms in the Piedmont Plateau and Eastern Shore sections of Maryland, conducted through the Agricultural Economics Department, in which six graduate students assisted over a period of three years. At present, three students are engaged in surveying about 150 dairy farms, 150 poultry farms, and 135 turkey growers.

Graduate students in Bacteriology and Dairy Husbandry have made important contributions in thesis work to public health problems of the State. Graduate students in Chemistry frequently work upon problems of direct importance to agricultural and other interests of the State.

College of Home Economics

M. MARIE MOUNT, *Dean.*

THE average young woman of today finds it necessary to earn her living for some time before marriage, and it is not unusual for her to continue after marriage. To develop in a young woman the capacity to earn a living and enjoy to the fullest a good home, and to direct successfully a home and family, are the aims of home economics education.

With these aims in view, the following four curricula of the College of Home Economics have been planned: General Home Economics, Foods and Nutrition, Textiles and Clothing, and Home and Institutional Management. The Home Economics Education curriculum will be found under the College of Education report. Within these curricula, more than half the credits, both prescribed and elective, are in general subjects, such as English, the languages, chemistry, physics, bacteriology, economics, sociology, and psychology, while less than half are in home economics subjects. During the past two years there have been a few changes in the arrangement of the curricula, and new courses in

home management, textiles, art, and nutrition have been added. The graduate work already begun by the Department of Foods and Nutrition has been further developed. This department has co-operated with the Experiment Station in a piece of research, to determine the cake baking qualities of flour made from Maryland wheat.

Enrollment in the College of Home Economics has increased 28 per cent since 1930 and this fall more than the usual number of students in other colleges of the University have elected one or more home economics subjects. There has been only one addition to the staff, a half-time clerical assistant with home economics training.

Upon the home-maker, during the times of economic stress, falls the task of readjusting family life to a changed budget. The young woman student is the potential home-maker and community leader of the future. Home economics courses have been modified in an attempt to train students to meet such needs. Home economics staff members have helped with planning of diets for use by various welfare agencies. Under the direction of a nearby social agency, a few of the advanced home economics students are doing similar work. The College of Home Economics, and the State Home Economics Association have published a series of low cost menus, with a per capita cost ranging from 19 cents to 24 cents per day for raw food. The home economics staff members are being called upon more than usual for talks before clubs, parent-teacher associations, and over the radio.

During 1932 the College of Home Economics held its third Mother's Day. The aim of such a function is to acquaint mothers with the work done by their daughters. The mothers are invited to spend the day at the University, and to visit buildings and attend a simple program planned and given entirely by home economics students. Both faculty and students feel that it has done much to bring parents, students, and faculty together.

The home economics students have formed a club to which all home economics students are eligible. There was a need for this organization, since only honor students are eligible for election to Theta Gamma, the honor society of the College of Home Economics. One of the first pieces of work undertaken by this club was to issue an alumnae letter.

Reports from employers of graduates of the College of Home Economics show that these young women are holding positions in a very creditable manner. They are employed in various fields. Some are teachers in colleges, public schools, and extension services. Others are engaged in health programs with welfare associations, and dairy councils, and a few are dietitians in institutions. A number of them demonstrate for manufacturers of food, textiles, and household equipment. Due to a scarcity of business openings, a larger number of stu-

dents are taking extra work, hoping to be prepared for business or teaching.

The dining hall and laundry come under the organization of the College of Home Economics. It has been possible to purchase some large kitchen equipment, do some necessary repair and paint work, and to refinish the dining room furniture after six years of use, from money saved as a result of the decrease in cost of food and other supplies.

The home economics faculty feel that real progress has been made within the last two years, in a continued increased enrollment, a general strengthening of courses, and encouraging reports from employers of the graduates of the College of Home Economics.

School of Medicine

J. M. H. ROWLAND, M.D., *Dean.*

THERE are now 406 students in the classes as follows: Freshmen, 121; sophomores, 95; juniors, 105; seniors, 85. Of these there are 187 from Maryland and 219 from other states. This is the greatest number of Maryland students (187) that has ever attended the Medical School of the University of Maryland. The non-resident students are divided as follows:

| | | | |
|----------------------|----|----------------|----|
| California | 2 | Ohio | 1 |
| Connecticut | 13 | Pennsylvania | 44 |
| Delaware | 2 | Rhode Island | 2 |
| District of Columbia | 3 | South Carolina | 1 |
| Maine | 3 | Utah | 2 |
| Massachusetts | 7 | Virginia | 2 |
| Michigan | 1 | West Virginia | 11 |
| New Jersey | 43 | Wisconsin | 1 |
| New York | 61 | Puerto Rico | 3 |
| North Carolina | 16 | | |

There are 3 post-graduate students and 4 special students.

In 1931-32, the enrollment was 420, of whom 171 were residents. The number recommended for the degree of Doctor of Medicine in June, 1932, was 102; for the previous year this number was 91. Continuing its educational efforts beyond the stage of routine instruction, the School has provided for the hospitals of Baltimore and Maryland about 140 internes and residents for the biennium past.

Out-Patient Departments

The School of Medicine furnishes heads of departments and visiting

physicians for the University Hospital. It assists in the conduct of work at Mercy Hospital and the Baltimore City Hospitals at Bay View. At both the University and Mercy Hospitals, general out-patient departments are maintained, to which approximately 138,000 visits are made annually by those seeking medical aid. Under the auspices of the University Hospital, the Obstetrical Clinic has delivered 1,212 women in their homes during the past year; deliveries performed in the year previous were above this number. The Babies' and Children's Clinic, operating under the same auspices, has kept up its work among needy families in the vicinity, visits for the past year totalling about 23,000.

New Departments

Since the last report, a department of Oncology has been established and also a department of Neurological Surgery. The department of Oncology is under the supervision of Doctors J. Mason Hundley, Jr., and Grant E. Ward; the department of Neurological Surgery is under the supervision of Doctor Charles Bagley, Jr. These departments have been long needed and fill a very worthwhile place in our system of teaching and therapeutics.

Medical Extension

For several years the School has systematically pursued a program of medical extension work aimed at giving the practicing physicians, both in Baltimore and the counties, an opportunity to keep abreast with recent developments in medical science. The program includes at present the following activities:

1. Thursday afternoon clinics are given at the University throughout the winter by prominent teachers in medicine, surgery and the specialities. These teachers are drawn from Baltimore and other medical centers of the country. The clinics are attended largely by physicians from Baltimore and the neighboring counties. The average attendance is about 200.
2. Annually, in June, an intensive course of three weeks is given for physicians of the State. Lectures, ward rounds, clinics, dispensary and laboratory work are included in this intensive curriculum.
3. During the summer months, extra-mural review courses are given in the cities and towns of Maryland in which a group of physicians is organized to pursue such courses. The work covers infant feeding and diseases of the heart and lungs.
4. A cultural course of ten lectures on the History of Medicine has been given by Dr. John Rathbone Oliver during the spring quarter of each of the last two years. These lectures, which are open to the students and local physicians, have proved to be a very popular adjunct to the curriculum.

Post-Graduate Instruction

In addition to the work indicated above, the facilities of certain of the pre-clinical departments have been so organized that the School of Medicine, in co-operation with the Graduate School, now offers work leading to the degree of Master of Arts and Doctor of Philosophy.

Research Activities

There has been, in recent years, a great increase in the research activities of the faculty. A large number of the teaching staff is engaged in these activities and much work of a valuable character is being done. This work has been aided by the Fellowships established through benefactions of the Weaver and Hitchcock Funds, Fellowships having been arranged for in Anatomy, Physiology, Medicine and Surgery. These are in addition to the Fellowship in Pharmacology previously established by the late Isaac D. Emerson.

Bulletins

The Bulletin of the School of Medicine is published four times a year, not including the catalog number. It is an excellent journal and contains much excellent scientific material and, in addition, a fairly complete record of school activities, the news of alumni and students, and changes in faculty and hospital activities. In addition to these, contributions in number have appeared from the various departments of the School during the past year.

Faculty

Numerous changes in the faculty will be noted in the catalog and in the Bulletin of the School of Medicine. During the year the School has suffered the loss by death of three highly valued staff members: Dr. C. Hampson Jones, April 11, 1932; Dr. Charles C. Conser, August 6, 1932; Dr. Gordon Wilson, October 26, 1932.

The School of Medicine of the University is continuing to supply to rural Maryland about the only additions to the number of practicing physicians in rural districts. Ability to do this has been increased materially by the scholarships established by the Wardfield and Cohen funds, which are granted only to students who agree to spend at least two years in rural districts selected by the Medical Council after completion of their medical school and hospital work.

University Hospital

A. J. LOMAS, M.D., *Superintendent.*

BOTH years of the biennium have been extremely trying to all concerned with the conduct of the University Hospital, owing to the greatly limited income, combined with increased demand for free work. This increased demand is not fully reflected in the figures, as it has been necessary to run to capacity in order to provide adequate clinical facilities, but the reduced income in the way of pay patients made the task a difficult one.

During recent years, a small balance had been accumulated for much-needed equipment; unfortunately, this had to be used during the past year. With the assistance of this fund and a small amount received from a benefactor, it was possible to end the biennial period with a shortage of only \$3,209.85. In order to permit the hospital to close this period without a deficit, the Baltimore Schools very graciously made up this amount. This could only be done, however, after very trying economies had been made and very willing assistance was given by all members of the staff and personnel of the University Hospital.

Unfortunately, it is not possible to look forward to such good fortune in the future. Starting on the first of October, 1932, we were without any earned balance, neither can we hope for the generous benefactors we have had in the past. Every practical degree of economy is enforced, but owing to the great demand for free work, and the decidedly reduced income from pay patients, a deficit at the end of this year will most surely develop, unless definite steps are taken to prevent it.

Throughout the entire period there has been no curtailment of free work, either in the out-patient department or in the hospital proper. In 1930-31, we had 2,544 free cases in the wards and in 1931-32 we had 2,853 free cases. In the dispensary we had 112,075 visits in 1930-31 and 124,623 visits in 1931-32.

Anticipation of the new hospital has played a great part in keeping the personnel interested and energetic during these trying times. Before the time for presenting you another report, we shall probably be in the new building, for which the entire staff is very definitely grateful.

Urgently needed repairs in the present building are being sacrificed in anticipation of removal to the new building and also as part of our economic program. We are tremendously handicapped with these needs, however, and it is quite doubtful just how long we can go on without

some much-needed assistance. We have endeavored not to permit this to interfere with the quality of work performed, but it is doubtful if an entire year can elapse without definite financial assistance, or a very considerable reduction in the amount of work done.

Following are short statistical and financial statements covering the biennial period:

UNIVERSITY HOSPITAL

| Admissions | 1930-1931 | 1931-1932 |
|---------------------------------------|------------------|------------------|
| Private and Semi-Private..... | 1,232 | 1,042 |
| Part-Pay Ward | 1,789 | 1,448 |
| Free, City | 1,203 | 1,337 |
| Free, State | 1,341 | 1,516 |
| Total Admissions | 5,565 | 5,343 |
| Patient Days | | |
| Private and Semi-Private..... | 15,626 | 11,618 |
| Part-Pay Ward | 21,985 | 18,141 |
| Free, City | 21,684 | 22,017 |
| Free, State | 21,354 | 23,492 |
| Total Patient Days..... | 80,649 | 75,268 |
| Deaths | | |
| Institutional | 267 | 234 |
| Within 24 Hours of Admission..... | 87 | 64 |
| Infants | 15 | 21 |
| Total Deaths | 369 | 319 |
| General Dispensary | | |
| New Patients Registered..... | 25,644 | 27,020 |
| Revisits | 86,431 | 97,603 |
| Total Dispensary Visits..... | 112,075 | 124,623 |
| Accident Department | | |
| New Patients | 9,489 | 10,223 |
| Revisits | 6,653 | 5,294 |
| Total Patients | 16,142 | 15,517 |
| Operating Room | | |
| Major Operations | 1,969 | 1,701 |
| Minor Operations | 670 | 571 |
| Eye, Ear, Nose and Throat..... | 658 | 854 |
| Broncoscopies and Laryngoscopies..... | 119 | 262 |
| Cæsarean Sections | 61 | 50 |
| Fractures and Casts..... | 229 | 180 |
| Surgical Dressings | 730 | 615 |
| Examinations | 995 | 787 |

UNIVERSITY HOSPITAL—RECEIPTS AND DISBURSEMENTS

| Receipts | 1930-31 | 1931-32 | Total 2 Years |
|---|--------------|--------------|------------------|
| Room and Ward Patients, including Board of Special Nurses..... | \$157,937.19 | \$117,304.08 | \$275,241.27 |
| Other Special Service and Supplies to Patients | 94,217.66 | 71,815.86 | 166,033.52 |
| Total Collected from Patients..... | \$252,154.85 | \$189,119.94 | \$441,274.79 |
| State of Maryland..... | 56,500.00 | 60,000.00 | 116,500.00 |
| City of Baltimore for Ward Patients | 32,646.10 | 32,608.90 | 65,255.00 |
| Proceeds, McPherson Estate..... | | 1,901.23 | 1,901.23 |
| Income, Harvey Estate..... | | 3,300.00 | 3,300.00 |
| Transfer from Baltimore Schools..... | | 3,209.85 | 3,209.85 |
| Other Miscellaneous Receipts..... | 28,394.65 | 19,680.24 | 48,074.89 |
| Total Cash Received..... | \$369,695.60 | \$309,820.16 | \$679,515.76 |
| Cash on Hand Beginning of Year.... | 20,582.14* | 11,032.18 | 20,582.14 |
| Total Accounted for..... | \$390,277.74 | \$320,852.34 | \$700,097.90 |
| Disbursements | | | |
| Food Supplies | \$62,015.41 | \$45,693.56 | \$107,708.97 |
| Housing Supplies | 45,174.25 | 35,242.87 | 80,417.12 |
| Medical and Surgical Supplies..... | 42,961.03 | 36,636.14 | 79,597.17 |
| Pay Rolls | 185,468.07 | 182,002.62 | 367,470.69 |
| Administration | 8,769.26 | 7,378.99 | 16,148.25 |
| Maintenance of Property..... | 14,272.05 | 10,107.14 | 24,379.19 |
| Betterments to Buildings and Equipment | 15,950.36 | 787.44 | 16,737.80 |
| Miscellaneous | 4,109.58 | 3,003.58 | 7,113.16 |
| Refund to Comptroller a/c 1930 Interest | 525.55 | | 525.55 |
| Total Cash Disbursed..... | \$379,245.56 | \$320,852.34 | \$700,097.90 |
| Cash on hand at end of year..... | 11,032.18 | None | None |
| Total Accounted for..... | \$390,277.74 | \$320,852.34 | \$700,097.90 |
| Accounts Payable at end of year.... | None | None | None |

*Included special donations for construction of air conditioning system, which construction had not been completed. The final construction bills were paid in 1931.

| | 1930-31 | 1931-32 |
|---|-------------|-------------|
| Cost per patient day, operating expense only.. | \$4.50 plus | \$4.25 plus |
| Cost per patient day, includ'g capital outlay.... | 4.70 plus | 4.26 plus |
| City allowance per day, free patients..... | 1.55 | 1.55 |
| State allowance per day, free patients..... | 1.08 | 1.32 minus |
| Cost per day, ward patients (estimated)..... | 4.00 | 4.00 |

DETAIL OF RECEIPTS

| Cash Received | 1930-31 | 1931-32 | Total 2 Years |
|-------------------------------------|---------------------|---------------------|---------------------|
| Cash on Hand, October 1..... | \$20,582.14 | \$11,032.18 | \$20,582.14 |
| State of Maryland..... | 56,500.00 | 60,000.00 | 116,500.00 |
| Private Patients' Board..... | 80,249.17 | 57,889.50 | 138,138.67 |
| Ward Patients' Board..... | 99,140.37 | 84,693.38 | 183,833.75 |
| Operating Room Fees | 20,222.50 | 15,751.80 | 35,974.30 |
| Laboratory Fees | 9,100.74 | 7,616.88 | 16,717.62 |
| X-Ray Fees | 29,229.12 | 20,063.12 | 49,292.24 |
| Special Nurses' Board | 11,193.75 | 7,330.10 | 18,523.85 |
| Dispensary Fees | 3,816.22 | 2,614.02 | 6,430.24 |
| Accident Room Fees..... | 8,244.10 | 6,914.31 | 15,158.41 |
| Drugs, Medicine | 9,912.73 | 7,713.36 | 17,626.09 |
| Medical and Surgical Supplies..... | 2,691.87 | 2,829.59 | 5,521.46 |
| Telephone and Telegraph | 701.89 | 801.93 | 1,503.82 |
| Children's Clinic | 21.87 | 83.15 | 105.02 |
| Cots and Meals | 1,558.60 | 862.40 | 2,421.00 |
| Anaesthetic Fees | 6,314.05 | 4,946.37 | 11,260.42 |
| Commissions | 879.18 | 623.42 | 1,502.60 |
| Cystoscopic Room Fees..... | 728.25 | 570.75 | 1,299.00 |
| Physiotherapy Fees | 1,315.96 | 1,225.11 | 2,541.07 |
| Electrocardiographic Fees | 100.00 | 50.00 | 150.00 |
| Miscellaneous Sales | 16,791.15 | 16,989.89 | 33,781.04 |
| Oxygen Room | 2,496.75 | 570.00 | 3,066.75 |
| Oncology | 23.50 | 5.00 | 28.50 |
| Total Hospital Receipts..... | \$381,813.91 | \$311,176.26 | \$681,957.99 |
| Donations | 8,463.83 | 1,265.00 | 9,728.83 |
| Income, Harvey Estate..... | | 3,300.00 | 3,300.00 |
| Proceeds, McPherson Estate..... | | 1,901.23 | 1,901.23 |
| Transfer from Baltimore Schools.... | | 3,209.85 | 3,209.85 |
| Total Receipts | \$390,277.74 | \$320,852.34 | \$700,097.90 |

DETAIL OF DISBURSEMENTS

| Capital | 1930-31 | 1931-32 | Total 2 Years |
|-------------------------------------|-------------|------------|------------------|
| New Equipment | \$15,950.36 | \$787.44 | \$16,737.80 |
| Operating | | | |
| Salaries and Wages..... | 185,468.07 | 182,002.62 | 367,470.69 |
| Food Supplies | 62,015.41 | 45,693.56 | 107,708.97 |
| Fuel | 26,075.37 | 20,094.69 | 46,170.06 |
| Office Supplies and Stationery..... | 1,072.49 | 837.22 | 1,909.71 |
| Printing | 2,220.87 | 1,712.46 | 3,933.33 |
| Medical and Surgical Supplies..... | 32,097.16 | 27,263.04 | 59,360.20 |
| Laboratory Supplies | 2,568.77 | 1,794.12 | 4,362.89 |
| Household, Laundry and Cleaning.. | 13,071.31 | 9,348.72 | 22,420.03 |
| Training School Supplies..... | 3,290.35 | 2,037.89 | 5,328.24 |
| X-Ray Supplies | 3,991.38 | 5,541.09 | 9,532.47 |
| Nurses' Home | 1,718.16 | 1,751.58 | 3,469.74 |
| Other Miscellaneous Supplies..... | 3,683.72 | 2,232.52 | 5,916.24 |

| | | | |
|---|---------------------|---------------------|---------------------|
| Materials for Repair of Buildings and Equipment | 8,387.27 | 6,351.56 | 14,738.83 |
| Renewals and Replacements..... | 4,166.62 | 2,004.00 | 6,170.62 |
| Light, Heat, Power and Water..... | 6,027.57 | 5,799.46 | 11,827.03 |
| Transportation | 1,333.53 | 812.58 | 2,146.11 |
| Communication | 3,900.39 | 3,729.65 | 7,630.04 |
| Insurance | 241.98 | 287.08 | 529.06 |
| Refunds to Patients..... | 1,439.23 | 771.06 | 2,210.29 |
| 1930 Interest Refund to State Treasurer | 525.55 | ..... | 525.55 |
| Total Expenditures | \$379,245.56 | \$320,852.34 | \$700,097.90 |
| Cash on hand at end of year..... | 11,032.18 | None | None |
| | <u>\$390,277.74</u> | <u>\$320,852.34</u> | <u>\$700,097.90</u> |

School of Nursing

ANNIE CRIGHTON, R. N., *Superintendent of Nurses.*

The following report for the School of Nursing covers the period from January 1, 1931, to January 1, 1933:

Assistants: Day, 1; Night, 1. Instructors: Theory, 1; Practice, 2.

In Charge:

One each for the Dispensary, Operating Room, Maternity, and Nurses' Home.

Head Nurses:

One each for the Lower Halls, Upper Halls, Night Duty in Upper Halls, Wards A-B, Ward G, Ward H, Ward I, Children's Ward, Surgical Supply Room, Accident Room, and Baltimore and Ohio Dressing Room.

Two each for Assistants in Operating Room, Outside Obstetrics—Prenatal, Outside Obstetrics—Delivery, Outside Obstetrics—Post-partum, and Oxygen Chamber.

Pupil Nurses filling Head Nurses' Positions:

Colored Women's and Men's Medical and Surgical Ward .. 1
Total number of Special Nurses .. 1,711
Student Nurses:

| | | | |
|---------------------|----|--------------------|----|
| Graduates | 1 | Juniors | 9 |
| Seniors | 27 | Probationers | 32 |
| Intermediates | 34 | | |

| | |
|--------------------------------------|-----|
| Total number of nurses at present .. | 103 |
|--------------------------------------|-----|

| | |
|--|----|
| Post-Graduate Students | 5 |
| Total number of Student Nurses who left the School | 41 |

Their reasons for leaving were illness and inability to meet the demands of nursing.

| | |
|---|--------|
| Total number of days lost through illness | 1,669½ |
|---|--------|

During the two years, 283 nurses were off duty for varying lengths of time because of illness. Seventy-three were admitted to Private Halls or Sydenham Hospital for treatment and the remainder were cared for in the Nurses' Home.

| | |
|---|-------|
| Requests for information and admission | 1,214 |
| Number of students entered in February, 1931, class | 19 |
| Number of students entered in October, 1931, class | 32 |
| Number of students entered in February, 1932, class | 15 |
| Number of students entered in October, 1932, class | 37 |

New Appointments:

- Louise Martin—Outside Obstetrical Nurse—Delivery Service.
Graduate University Hospital, 1931.
- Elizabeth Trice—Outside Obstetrical Nurse—Delivery Service.
Graduate University Hospital, 1930.
- Ruth Frothingham—Night Nurse Upper Halls.
Graduate University Hospital, 1930.
- Alma Bradley—Night Nurse Upper Halls.
Graduate University Hospital, 1930.
- Carrie Miller—Assistant Supervisor Operating Room.
Graduate University Hospital, 1932.
- Marie Cox—Night Nurse Upper Halls.
Graduate University Hospital, 1931.
- Luella Rodes—Night Nurse Upper Halls.
Graduate University Hospital, 1932.
- Ruth Young—Outside Obstetrical Nurse—Delivery Service.

Resignations:

- Bertha Tarun—Outside Obstetrical Nurse—Delivery Service.
- Louise Martin—Outside Obstetrical Nurse—Delivery Service.
- Elizabeth Trice—Supervisor Surgical Supply Room.
- Grace Thawley—Night Nurse Upper Halls.
- Ruth Frothingham—Night Nurse Upper Halls.
- Alma Bradley—Night Nurse Upper Halls.
- Eva Mae Bradburn—Assistant Supervisor Operating Room.
- Hilda Willis—Outside Obstetrical Nurse—Delivery Service.
- Frances Branley—Assistant Superintendent of Nurses.
- Jane Moffatt—Supervisor Dispensary.
- Grace Dutterer—Head Nurse, Ward I.
- Margaret Currens—Head Nurse, Lower Halls.
- Gladys Adkins—Assistant in Operating Room.

Transfers:

- Vesta Swartz—From Night Supervisor to Assistant Superintendent of Nurses.
- Marie Cox—From Night Nurse, Upper Halls, to Night Supervisor.

Leave of Absence:

Jane Moffatt—Supervisor General Dispensary.

Temporary Transfer:

Grace Dutterer—Supervisor General Dispensary from Head Nurse, Ward I.

Temporary Appointments:

Grace Young—Head Nurse, Ward I.

Mary Fisher—Head Nurse, Wards A-B, and Night Supervisor.

Louise Martin—Head Nurse, Lower Halls, Upper Halls, Wards A-B, and Outside Obstetrical Department.

Ruth Young—Head Nurse, Ward II, Ward G, and Accident Room.

Luella Rodes—Head Nurse, Ward I, Ward G, and Dispensary.

Rowena Roach—Outside Obstetrical Department.

Reappointments:

Helen Wright—Instructor in Practical Nursing.

Lillie Hoke—Instructor in Theoretical Nursing.

Bertha Hoffman—Assistant Instructor in Practical Nursing.

Elizabeth Aitkenhead—Supervisor Operating Room.

Elizabeth Cannon—Head Nurse, Ward II.

Lucy Brude—Supervisor, Upper Halls.

Estelle Baldwin—Head Nurse, Ward C.

Beatrice Krans—Supervisor Maternity.

Emma Winship—Supervisor Accident Room.

Freda Fazenbaker—Head Nurse, Wards A-B.

Grace Dick—Head Nurse, Ward G.

Stella Ricketts—Outside Obstetrical Nurse, Pre-natal Service.

Catherine Rodenwald—Outside Obstetrical Nurse, Pre-natal Service.

Harriet Schroeder—Outside Obstetrical Nurse, Post-partum Service.

Evelyn Zupf—Outside Obstetrical Nurse, Post-partum Service.

Naomi Allen—Supervisor Oxygen Chamber.

Eva Laigneill—Assistant Supervisor Oxygen Chamber.

Cora Mason Wilson—Supervisor Surgical Supply Room.

Elizabeth Trice—Outside Obstetrical Nurse, Delivery Service.

The School of Law

DR. ROGER HOWELL, *Dean.*

THE Law School has continued its efforts to improve its standing as an educational institution, with, it is believed, a very marked degree of success. These two years mark, in a way, the final stage in the period of transition begun in 1925, when the Faculty Council decided to initiate the movement to comply with requirements laid down for approved law schools by the Council on Legal Education of the American Bar Association and by the Association of American Law Schools.

In December, 1929, the School was approved by the Council on Legal Education of the American Bar Association and in December, 1930, was admitted to membership in the Association of American Law Schools. In both instances, the action was, to a considerable extent, conditional upon its remedying certain defects in its organization, particularly with respect to library material.

The School has devoted considerable attention during the last two years to building up the library and some 3,000 volumes have been added. Although it still lacks certain important reports, it is now in a fairly satisfactory condition. It is hoped that at least some of the deficiencies may be supplied during the next year.

Student registration, which reached a low mark in 1930-31, has shown a steady increase. Enrollment in the Day School has more than doubled since 1929, and the entering class in that School was greater than the total Day School enrollment in 1929-30. The Evening School enrollment, while larger than in 1930-31, fell off slightly this year from the 1931-32 figures; it is believed that this is the result primarily of prevailing economic conditions, as the majority of these students are dependent upon earnings from outside employment for payment of their fees. On the whole, it is not believed that any appreciable increase in number of students should be anticipated in the future, as the present enrollment is larger than that of schools with similar standards in States comparable in population to Maryland.

That there is no public need in Maryland for training large numbers of new lawyers is evidenced by figures as to present over-crowding of the bar presented to the 1932 meeting of the American Bar Association by the Sub-Committee of the Council of the Section of Legal Education and Admissions to the Bar. These showed an alarming condition of over-crowding throughout the entire country, with Maryland being the sixth most over-crowded State. Only two jurisdictions—the District of Columbia and Nevada—were appreciably more over-crowded, and in both of these abnormal conditions prevail.

The Sub-Committee report states further that it is the general opinion that this is a dangerous condition, not only for the bar itself, but for the public generally, whose interests are viewed as vitally and adversely affected. It follows, obviously, that the public interest in Maryland, even more than in most States, requires a decrease in prospective applicants for admission to the bar, rather than an increase, with greater emphasis upon education, training and character of applicants.

It was with this thought in mind that the Law School instituted higher standards for admission to the School and also for graduation. Its efforts have been successful in so far as they relate to the stand-

ing of the School in educational circles: they are largely neutralized by the fact that present statutes regulating admission to the bar in Maryland permit the operation of schools with lower standards and also permit students, whose work has not been sufficiently good to entitle them to graduation, to take the bar examinations.

Nevertheless, it is the sentiment of the Faculty Council of the Law School that its duty as a State institution requires it to adhere imperatively to its present standards and, indeed, to increase rather than decrease them. It is questionable whether the present registration is not greater than is required by the public interest.

The full-time faculty has been increased from four to five during the biennium. At least one additional full-time instructor should be engaged, not to supplant any of the present part-time staff, but to enable addition to the curriculum of certain subjects not offered at present.

The curriculum of the Law School has been given much thought and attention by the faculty here, in common with law schools throughout the country. It has been realized at all law schools that the standard law school curriculum, having remained substantially without change in selection of courses and arrangement of course material for some sixty years, had not kept pace with developments in business and government and needed considerable development of its own. There is general agreement that certain fields, in which no instruction was formerly given, should be embodied in new courses and added to the curriculum, and that more or less extensive rearrangement of existing courses should be made.

While it is not felt that this School is in position to make or should make radical experiments, in order to perform its function of offering proper legal education, it should embody such changes as experiments elsewhere have proved to be desirable. At present, no courses are offered in the following subjects which are generally accepted as of much importance in the training of a lawyer: Administrative Law; Taxation; Corporate Management, Finance and Reorganization; Administration of Debtors' Estates; Creditors' Rights. In order to offer at least some of these courses, an additional full-time instructor and possibly additional part-time instructors are needed. Rearrangement of certain existing courses, such as courses in Suretyship, Mortgages, Corporations, Agency and Partnership, would be in order at the same time; this could not be accomplished satisfactorily with the present number of instructors, or without addition to the curriculum of certain of the courses mentioned, such as the various corporation courses and courses in Creditors' Rights and Administration of Debtors' Estates.

Under direction of Professor Casner, a rearrangement of material in the Property courses has been made, with most satisfactory results

from the standpoint of eliminating duplication and offering instruction in fields of Property law not heretofore covered at all thoroughly.

On the whole, the progress of the School during the biennium has been most satisfactory. The most difficult and important part of the transition to a first-class school involved the creation of an improved student body, from the standpoint of character and training and of approach to their work. In this, the success of the School is most apparent. The present student body is far superior to that of some years ago, in general character, ability, enthusiasm and willingness to work, and the morale of the students is exceptional. A Student Council, which has sponsored a series of addresses to the student body by prominent judges and lawyers has been of material assistance in bringing about this result; this report would not be complete if the whole-hearted co-operation at all times received from the student representatives, in all measures looking to improvement of the School, were not noted and gratefully acknowledged.

School of Dentistry

J. BEN ROBINSON, D.D.S., *Dean.*

THE School of Dentistry has maintained satisfactory enrollment. Under more favorable business conditions, there might have been a much larger enrollment, perhaps the maximum capacity. The following figures show the status by classes for the first year of the last biennium and the session of 1931-32:

| | 1929-30 | 1931-32 |
|----------------------------|---------|---------|
| Freshman Class | 86 | 77 |
| Sophomore Class | 99 | 100 |
| Pre-Junior Class | 73 | 86 |
| Junior Class | 56 | 94 |
| Senior Class | 35 | 65 |
| Total | 349 | 422 |

The quality of work performed by students has shown noticeable improvement, due in large measure to stricter attention in selection of students admitted to the pre-dental and freshman years. This improvement is evident from class room reports, improved attitude of the student body, and flattering reports from various State boards of dental examiners.

When asked, in 1926, to outline the needs of the School of Dentistry

for the next decade, a program considered at that time to be adequate was proposed. This recommendation, as represented by the new building and equipment, has in some respects belied our judgment and some of the facilities are greatly taxed. It seems imperative that attention be given to relief in some of the departments. The work of students in clinical practice was 82 per cent greater in 1931-32 than in 1929-30 and there is present need for additional clinical space. To provide for the unexpected growth in four departments of instruction, additional space represented by extension of the present dental building west to the limit of the University property is recommended. This would add approximately 5,000 square feet of floor space to be allotted to X-ray work, oral surgery and exodontia, anesthesia, diagnosis, teachers' rooms and research rooms, all badly needed.

The Dental Library has been improved materially. Each year an item of \$1,200 is set up in the budget, which provides for accumulating library material, binding, etc. The Maryland State Dental Association has provided an endowment of approximately \$17,000, which fund is administered in the interest of the library through a committee representing the Association and the Dean of the School of Dentistry. During the last biennium, the library has spent an award of \$1,500 from the Carnegie Foundation. Two full-time assistant librarians are employed and negotiations are in progress for a cataloguer.

An appreciable increase in the quantity of instruction has been provided by additional service of the present teaching force, but there is yet inadequacy in instruction which can only be corrected by additional instructors. Such increases have not been requested because it is realized that all needs cannot be met under present conditions. It is hoped, however, that improvements and corrections may be made as rapidly as possible. A survey commission, working under the auspices of the American Association of Dental Schools and financed by the Carnegie Foundation, has made a thorough study of the curricula in the dental schools of the United States and Canada and of the definition of adequate dental service to the public. The report of this commission is nearing completion and it is anticipated that it will influence changes in schools along lines of more definite standardization and uniformity.

In addition to the under-graduate course, the School of Dentistry is offering post-graduate work in one department, namely, Prothesis. So far, only the United States Naval Dental Officers Reserve Corps has taken advantage of this course. It has proved quite satisfactory to the School and has tended to advertise it as capable of providing post-graduate work. Naval Dental Officers commend it highly. Enrollment in this department from the profession is anticipated.

As clinicians and essayists, teachers of the School are in constant demand by dental societies throughout the Eastern section of the United States. They have participated in the larger dental organizations and have made numerous contributions to educational advancement. The Dean of the School of Dentistry is at present the president of the American Association of Dental Schools. At a recent meeting of the American College of Dentists, Fellowship was conferred upon the Professor of Physiology and Professor of Orthodontia.

School of Pharmacy

DR. A. G. DUMEZ, *Dean*.

FOR the first time in many years, the School of Pharmacy has occupied quarters adequate in size to accommodate its work reasonably well. Hence, the efforts of Administrative Officers and Faculty for the biennium just ended have been devoted mainly to building up the teaching staff, to improvement of instruction in the various departments, and to development of research. Results of these efforts are already evident in better quality of work by students and increased enrollment for advanced courses.

Total enrollment for the two sessions of the biennium was about the same; that is, in the neighborhood of 360; but the proportion of fourth-year students and of graduate students increased greatly. For the session 1929-30, there were enrolled nine fourth-year students and three graduate students. Enrollment for the session 1931-32 was 21 fourth-year students and 13 graduate students, which represents increases of 133 $\frac{1}{3}$ per cent and 333 $\frac{1}{3}$ per cent, respectively.

To provide necessary facilities for instruction in advanced courses, special apparatus and equipment were installed in departments where required, and new books were added to the library. The total number of volumes in our library now exceeds 4,500, and most of the leading domestic and foreign pharmaceutical journals are received regularly. We still lack complete sets of some of the foreign periodicals essential to the make-up of a good reference library, but this deficiency is being corrected as rapidly as funds become available.

Further provision was made for taking care of the increased instructional load resulting from heavy enrollment in advanced courses by enlarging the faculty. Six part-time teachers were employed to assist in giving laboratory instruction, correcting notebooks, grading examination papers, etc., thus relieving the teachers of higher rank of these

time-consuming duties and enabling them to give more attention to advanced students. This arrangement also made possible an improvement in quality of undergraduate instruction in certain departments where it was not up to the standard set by standardizing agencies. Even with these additions a few of the teachers were still compelled to carry a load in excess of that recommended by these agencies. Plans have been made to correct this condition as rapidly as possible.

Progress in development of research in pharmacy and the correlated sciences has been greater than anticipated. In addition to certain members of the faculty, 13 graduate students were doing research work at the end of the biennium. Some of this work was completed and the results have been published. In addition, several members of the teaching staff have collaborated with committees engaged in revision of the two official drug standards, namely: The Pharmacopœia of the United States, and the National Formulary. Some investigational work was carried on for pharmaceutical manufacturing houses. In the latter instances, the expenses incurred were paid by these houses. It is hoped that the School will be in position to do more of this kind of work in the future because of the contacts which it provides, and because it offers a fine opportunity to secure an intimate knowledge of the problems faced by drug manufacturers of the present day.

As in the preceding biennium, the School has continued the practice of detailing its students to work in dispensaries of the various hospitals in the city and of co-operating with the Maryland Board of Pharmacy in holding examinations for registration. In the latter instance, the School supplied necessary classroom and laboratory space, and equipment required for giving these examinations.

With the beginning of the new biennium, the three-year course in pharmacy will be discontinued and a minimum course of four years of work, leading to the degree of Bachelor of Science in Pharmacy, will be given in its place. This means that the instructional load will be increased by $33\frac{1}{3}$ per cent, beginning with the session 1935-36, and that plans for handling this additional instructional load will have to be formulated before the end of the biennium. Additional class room and laboratory space will be needed, as well as new teachers. As it is believed that the number of students now enrolled in the School is ample to meet pharmaceutical needs of the State, and as the fees now charged are equal to or in excess of those charged by neighboring schools of pharmacy, it would seem that the only way to meet the new condition will be through an increase in funds appropriated by the State. The size of the increase in the State appropriation will depend upon the manner in which the additional space is provided. New construction will naturally require a greater outlay than remodeling of old quarters, if such be available. It is estimated that the amount required for employment of necessary additions to the instructional staff will not exceed \$7,500.

Report of the Dean of Women

ADELE H. STAMP, *Dean.*

INCREASED enrollment of women students in the University made necessary the creation in 1922 of a separate department which would direct their social activities, supervise their housing needs; in short, organize their entire student life. Compared with an enrollment of 94 women students in 1922, when the Department of Dean of Women came into being, the enrollment was 378 in 1931 and 461 in 1932.

It is very difficult to define in exact terms the duties of the Dean of Women. In large part, they are rather intangible. However, they can be loosely classified under five heads: Administrative, advisory, academic, social, and miscellaneous.

Administrative duties include: Serving on committees, attending faculty meetings, supervision of dormitories and off-campus houses, recommending students for scholarships and loan funds, interviewing prospective students and their parents, making and enforcing house regulations in co-operation with the student government, etc.

Academic duties include: Teaching and supervising scholarship. Causes of conditions and failures are investigated. If a student is carrying too heavy a program, entering too many extra-curricula activities, has had inadequate preparation for college, or if she lacks capacity, an endeavor is made to make the proper adjustments.

Social duties include: Directing social life on the campus; attending social functions; approving chaperones for dances; acting as chaperone; maintaining standards of good taste in social affairs; offering hospitality in the name of the institution.

Miscellaneous duties include: Co-operating with and advising local Panhellenic and Women's Student Government Association; writing letters of recommendation for students; guarding old traditions and helping to form new ones.

One of the primary aims of this department was to establish an effective student government among women. The scope of the work of the Women's Student Government has expanded to include off-campus houses and sorority houses as well as campus dormitories. The council has proved itself an effective and competent body in handling student conduct.

One of the most effective organizations is the Women's Senior Honor Society. Members of the junior class are elected to it prior to commencement by the out-going senior members. This society stands for womanhood, scholarship, and citizenship. Its worthy purposes and high ideals continue to be an increasing force for good on the campus and it is now recognized as the highest honor for women.

The fall of 1931 saw completion of the first women's dormitory at College Park. This filled a long-felt need. The building was dedicated on December 1 in the presence of distinguished guests, including the Governor of Maryland, members of the Board of Regents, and club women from every town and county in the State. It was named Margaret Brent Hall, in honor of one of Maryland's earliest distinguished citizens. This building of colonial architecture, modern in every respect, houses 118 girls. In the fall of 1932 it was filled to overflowing with a waiting list. At present, it is impossible to house all of the 461 girls on the campus and it is highly important that all freshmen should be on the campus.

The outstanding need in this department is additional dormitory space. It is hoped that the legislature will see fit to appropriate sufficient funds to complete the second unit of the women's group.

Physical Education for Women

ADELE H. STAMP, *Dean of Women.*

THE women's field house was completed in the fall of 1931 and dedicated December 1, at the same time as the women's dormitory. This fills an acute need. Prior to that time the girls shared the use of the men's gymnasium with the R. O. T. C., band, track, lacrosse and basketball teams—in short, with the entire athletic department for men—and it was highly unsatisfactory and undesirable.

In the women's field house, besides the main gymnasium, there are the following rooms: A locker and shower room, office for the physical director, office and examining room for a woman physician, class room, seminar room, and a kitchenette. All are outfitted with modern equipment. At the back of the field house it is planned to have a complete athletic plant for girls. At present, the tennis courts have been completed, are in constant use, and are much appreciated by the girls.

A program of intra-mural sports is carried on which includes hockey, tennis, basket-ball, volley-ball, archery and rifle. This is supplemented by stunts, interpretive dancing and folk dancing.

The Women's Athletic Association comes under the supervision of this department and has shown a steady growth since its organization. The aim of this association is to promote interest in athletics and sportsmanship among all the women students.

Each year a May Day pageant is given to the seniors by members of the junior class. The fame of Maryland May Days has spread all over the State because of their originality and beauty. May Day is one of the outstanding social events of this department and attracts more visitors each year.

Two courses in hygiene are given by the Dean of Women and are required of all freshman and sophomore girls. One deals with personal hygiene and the other with community hygiene.

A complete physical examination is given each girl once a year by a competent woman physician. The parents are notified of physical defects which need correcting. The physical education instructor co-operates with the woman physician in giving corrective work.

There are three outstanding needs in this department:

First: An assistant to the physical director. With 461 girls in school, it is impossible for one person to carry on the work efficiently.

Second: The services of a woman physician for part of each day. She would be available for medical advice, guidance and consultation along health lines for the girls. She also would give the medical examinations. At present, we have a woman physician for two half days a week. If we are to adequately care for the health needs of approximately 500 girls, it will be necessary to have a woman physician for a longer period.

Third: Completion of the athletic field, which will take care of hockey, baseball, volley-ball and archery. Hockey is one of the most popular sports and a very bumpy, undesirable field is now used. It is hoped that it will be possible to complete this field at an early date.

The Library

GRACE BARNES, *Librarian.*

LIBRARY activities have increased decidedly in the last two years, due to the requirements of larger enrollment and to the more adequate space and better facilities provided by the new building.

The new Library Building was occupied the first week in April, 1931. The reading room, which occupies the front of the second floor, is

129 by 42 feet and has seats for 236. Three seminar rooms and 18 study alcoves give added space for graduate students. The front of the ground floor and basement are assigned to executive offices, post office and students' supply store. Exclusive of equipment, the cost of the building was \$215,000.

Two new members were added to the staff in 1931, a head cataloguer and a clerical assistant. These additions made it possible for an experienced member of the staff to be given the position of Reference and Loan Librarian, which includes supervision of the reading room.

Attendance records taken about the middle of October showed a daily average (including evening) of 1,130 students, nearly two and one-half times as many as came to the old library.

Books in Library

There were approximately 44,225 books on the campus on October 1, 1932, about 38,725 being in the Library Building. About 8,000 volumes were added during the biennium by purchase, by gift, and by binding periodicals. The most notable gifts were: About 100 volumes of English and German literature from Hon. Samuel M. Shoemaker; 420 books from Dean H. J. Patterson; about 800 volumes on various subjects transferred from the Library of the School of Medicine in Baltimore; 60 volumes of German classics from daughters of the late Carl Ernst Vetter, as a memorial to their father; 83 children's books from Miss Hazel Jones; the Washington Chapter of Kappa Kappa Gamma has started a memorial to Miss Cora Rigby with a gift of seven of the best books on journalism.

The Class of 1929 gave a beautiful picture, which adorns the main stairway. A fine reproduction of Stuart's unfinished portrait of George Washington and an 18-inch globe of the world on a walnut stand were purchased for the reading room.

Volumes Catalogued and Cards Made

| Year | New Vols. | Cards for Catalog | Cards for Shelf List |
|---------------|-----------|-------------------|----------------------|
| 1930-31 . . . | 2,050 | 4,827 | 1,459 |
| 1931-32 . . . | 3,785 | 8,204 | 1,997 |
| Recataloged | | | |
| 1931-32 | 654 | 927 | 285 |
| Total | 6,489 | 13,958 | 3,741 |

Total number of cards, 17,699.

Several thousand unbound periodicals, which in the old library could not be arranged conveniently for use, were put in usable order by

student assistants. Bulletins and periodicals bound and cataloged totaled 1,872 volumes.

In 1930-31 the Library borrowed from other libraries 52 books and periodicals and 49 in 1931-32, making a total of 101. This is 39 less than in the preceding biennium; as the files of periodicals and collections of books are built up, the need for borrowing decreases.

Circulation of books and periodicals, including "reserve books," was 41,761 volumes in 1930-31 and 53,509 in 1931-32. The total of 95,270 volumes for the biennium is an increase of 41,738 volumes, or 78 per cent over the preceding biennium. The Chemistry Department now has a supervised reading room where most of the chemical literature is shelved and from which 637 items were loaned.

Instruction to Freshmen

A one-semester course in use of the card catalog and reference books is taught by the Librarian and Reference and Loan Librarian. Enrollment for the biennium was 471 and for the first semester of 1932-33 is so large as to make it evident there will be a considerable increase for the year.

A handbook was compiled in 1931, intended primarily as a source of information on the Library for students, especially freshmen.

Meeting of Librarians

The Columbian Library Association whose membership comprises the District of Columbia and the Maryland Library Associations, held its annual meeting on the campus in 1932. It was attended by 200 members.

Needs of the Library

Additional space for book stacks will be needed and will be available when shelves are built on the mezzanine floor; also, a section of the stacks should be enclosed and fitted with locks, for housing books not allowed to circulate freely and valuable reports. Another member of the staff is much needed, to do evening work at the reference desk and to assist with cataloging. More student assistance is also needed at the loan desk.

Each year the enrollment in the University increases and this is reflected in greater use of the Library. This is cause for congratulation, but the Library appropriation has always been small compared with libraries of other institutions of its size and importance. Its book collection and its appropriation could both be doubled now and both would still be smaller than those of almost all of the comparable univer-

sities. We have now a building of which we are justly proud. The next step in progress is towards a better book collection and the staff to make the Library resources available.

Registrar's Report

(COLLEGE PARK)

ALMA H. PREINKERT, *Assistant Registrar.*

ENROLLMENT of students, the degrees conferred and certificates awarded, and the number of persons on the instructional staff at College Park for the biennium, 1930-32, are shown in tables on following pages. The preliminary enrollment for 1932-33 is included; these figures are not complete, since there will be additional registrations at the beginning of the second semester. Total enrollment for the regular academic year 1932-33 undoubtedly will approach 2,000. Enrollment for the Rural Women's Short Course, which will be held in June, 1933, and the Florists' Short Course, which is given in January, 1933, have been estimated, so that a comparable total figure for 1932-33 might be obtained.

The growth of the Institution in the last twelve years has been remarkable. The student body in the regular academic year has increased 270 per cent and the number in the Summer School has increased 397 per cent. The following table shows the enrollment at College Park of resident students carrying regular courses for the period since the institution became the University of Maryland.

| | Regular Academic Year | Summer School | Total |
|---------|--------------------------|------------------|-------|
| 1920-21 | 522 | 208 | 730 |
| 1921-22 | 701 | 380 | 1,081 |
| 1922-23 | 885 | 446 | 1,331 |
| 1923-24 | 960 | 452 | 1,412 |
| 1924-25 | 978 | 486 | 1,464 |
| 1925-26 | 1,064 | 454 | 1,518 |
| 1926-27 | 1,139 | 477 | 1,616 |
| 1927-28 | 1,194 | 572 | 1,766 |
| 1928-29 | 1,287 | 626 | 1,913 |
| 1929-30 | 1,410 | 721 | 2,131 |
| 1930-31 | 1,571 | 745 | 2,316 |
| 1931-32 | 1,871 | 927 | 2,798 |
| 1932-33 | *1,933 | 1,033 | 2,966 |

*Figures for 1932-33 are not complete; second semester registration is not included.

During the last two years there has been an increase of 23 per cent in the regular academic years and 39 per cent in the Summer School. It is likely that by the close of the year the enrollment for 1932-33 at College Park will have passed a total of 3,000 for the regular winter session and the Summer School.

In 1930-31, 271 degrees were conferred and 67 certificates were awarded; in 1931-32, 302 degrees were conferred and 74 certificates were awarded; the total for the biennium was 573 degrees and 141 certificates.

The following tables give detailed figures :

ENROLLMENT OF STUDENTS AT COLLEGE PARK

1930-1931

1931-1932

1932-1933*

| Resident Collegiate Courses: | 1930-1931 | | | 1931-1932 | | | 1932-1933* | | |
|---|-----------|-------|-------|-----------|-------|-------|------------|-------|-------|
| | Men | Women | Total | Men | Women | Total | Men | Women | Total |
| Academic Year: | | | | | | | | | |
| College of Agriculture..... | 160 | 9 | 169 | 173 | 10 | 183 | 184 | 9 | 193 |
| College of Arts and Sciences..... | 538 | 105 | 643 | 636 | 134 | 770 | 609 | 161 | 770 |
| College of Education..... | 67 | 109 | 176 | 59 | 123 | 182 | 81 | 129 | 210 |
| College of Engineering..... | 320 | 1 | 321 | 387 | 1 | 388 | 407 | ... | 407 |
| College of Home Economics..... | ... | 84 | 84 | ... | 96 | 96 | ... | 112 | 112 |
| Graduate School | 144 | 34 | 178 | 203 | 49 | 252 | 190 | 51 | 241 |
| Total Academic Year..... | 1,229 | 342 | 1,571 | 1,458 | 413 | 1,871 | 1,471 | 462 | 1,933 |
| Summer School | 257 | 488 | 745 | 338 | 589 | 927 | 406 | 627 | 1,033 |
| Total Resident Collegiate, Less Duplications | 1,374 | 779 | 2,153 | 1,665 | 950 | 2,615 | 1,704 | 1,041 | 2,745 |
| Extension Courses: | | | | | | | | | |
| College of Education..... | 151 | 67 | 218 | 145 | 32 | 177 | 162 | 37 | 199 |
| College of Engineering..... | 232 | ... | 232 | 168 | ... | 168 | 376 | ... | 376 |
| Total Resident and Extension, Less Duplications..... | 1,757 | 846 | 2,603 | 1,978 | 982 | 2,960 | 2,242 | 1,078 | 3,320 |
| Short Courses: | | | | | | | | | |
| Rural Women | ... | 525 | 525 | ... | 543 | 543 | ... | 1,550 | 1,550 |
| Boys' and Girls' Club..... | 194 | 246 | 440 | 132 | 252 | 384 | 95 | 171 | 266 |
| Ministers | ... | ... | ... | 25 | ... | 25 | ... | ... | ... |
| Volunteer Fireman | 49 | ... | 49 | 110 | ... | 110 | 90 | ... | 90 |
| Florists | ... | ... | ... | 158 | 89 | 247 | 160 | 190 | 350 |
| Practice School (Summer Sch.) | 28 | 49 | 77 | 35 | 25 | 60 | 26 | 12 | 38 |
| Bridge Inspectors | 46 | ... | 46 | ... | ... | ... | ... | ... | ... |
| Total Short Courses..... | 317 | 820 | 1,137 | 460 | 909 | 1,369 | 371 | 823 | 1,194 |
| Grand Total All Courses, | | | | | | | | | |
| Less Duplications | 2,074 | 1,666 | 3,740 | 2,438 | 1,891 | 4,329 | 2,613 | 1,901 | 4,514 |

*Figures for 1932-33 are not complete; second semester registration not included.

†Estimated

MEMBERS OF STAFF ENGAGED IN INSTRUCTION AT COLLEGE PARK

1930-1931

| | Agri- culture | Arts and Sciences | Educa- tion | Engi- neering | Home Economics | Physical Education | Military | Summer School Specials | Extension | | Total Less Dupli- cations |
|-------------------------------|------------------|----------------------|----------------|------------------|-------------------|-----------------------|----------|------------------------------|-----------|-------|------------------------------------|
| | | | | | | | | | Edn. | Engr. | |
| Professors | 17 | 16 | 5 | 4 | 2 | 1 | 1 | ... | 1 | ... | 46 |
| Collaborating Professor | ... | ... | 1 | ... | ... | ... | ... | ... | ... | ... | 1 |
| Associate Professors | 5 | 6 | 1 | ... | 1 | ... | ... | ... | ... | ... | 13 |
| Assistant Professors | 9 | 8 | 1 | 4 | 1 | ... | 3 | ... | ... | ... | 26 |
| Lecturers | 4 | 3 | ... | 2 | ... | ... | ... | ... | ... | ... | 9 |
| Instructors | 1 | 10 | 2 | 1 | 2 | 2 | ... | 19 | 9 | 1 | 47 |
| Assistants | 2 | 6 | 1 | 1 | 1 | ... | ... | ... | ... | ... | 11 |
| Graduate Assistants | 7 | 13 | 1 | ... | ... | ... | ... | ... | ... | ... | 21 |
| Fellows | 3 | 3 | ... | ... | 1 | ... | ... | ... | ... | ... | 7 |
| Student Assistants | 1 | 1 | ... | 2 | ... | 1 | ... | ... | ... | ... | 5 |
| — | — | — | — | — | — | — | — | — | — | — | — |
| 49 | 66 | 12 | 14 | 14 | 8 | 4 | 4 | 19 | 10 | 1 | 186 |

1931-1932

| | | | | | | | | | | | |
|----------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Professors | 18 | 16 | 5 | 4 | 1 | 2 | 1 | ... | 1 | ... | 47 |
| Associate Professors | 7 | 7 | 1 | 2 | 1 | ... | ... | ... | ... | ... | 18 |
| Assistant Professors | 5 | 10 | 1 | 2 | 1 | ... | 3 | ... | ... | ... | 22 |
| Lecturers | 6 | 2 | ... | 1 | ... | ... | ... | ... | ... | ... | 9 |
| Associate | 1 | ... | ... | ... | ... | ... | ... | ... | ... | ... | 1 |
| Instructors | 3 | 9 | 4 | 1 | 2 | 2 | ... | 20 | 13 | 1 | 54 |
| Assistants | 4 | 7 | 2 | 1 | ... | ... | ... | ... | ... | ... | 14 |
| Graduate Assistants | 5 | 11 | 1 | ... | 1 | ... | ... | ... | ... | ... | 18 |
| Fellows | 5 | 10 | ... | ... | ... | ... | ... | ... | ... | ... | 15 |
| Student Assistants | ... | 1 | ... | 4 | ... | 1 | ... | ... | ... | ... | 6 |
| — | — | — | — | — | — | — | — | — | — | — | — |
| 54 | 73 | 14 | 15 | 15 | 6 | 5 | 4 | 20 | 14 | 1 | 204 |

DEGREES AND CERTIFICATES CONFERRED AT COLLEGE PARK

| | 1930-1931 | | | 1931-1932 | | | Total for Biennium | | |
|---|-----------|-------|-------|-----------|-------|-------|--------------------|-------|-------|
| | Men | Women | Total | Men | Women | Total | Men | Women | Total |
| Honorary Degrees: | | | | | | | | | |
| Doctor of Laws..... | ... | ... | ... | 1 | ... | 1 | 1 | ... | 1 |
| Doctor of Science..... | ... | ... | ... | 1 | ... | 1 | 1 | ... | 1 |
| Total Honorary Degrees..... | ... | ... | ... | 2 | ... | 2 | 2 | ... | 2 |
| Honorary Certificates of Merit..... | 3 | ... | 3 | 3 | ... | 3 | 6 | ... | 6 |
| Advanced Degrees: | | | | | | | | | |
| Graduate School: | | | | | | | | | |
| Doctor of Philosophy..... | 11 | 1 | 12 | 3 | ... | 3 | 14 | 1 | 15 |
| Master of Arts..... | 9 | 3 | 12 | 9 | 10 | 19 | 18 | 13 | 31 |
| Master of Science..... | 28 | 5 | 33 | 32 | 6 | 38 | 60 | 11 | 71 |
| College of Engineering: | | | | | | | | | |
| Civil Engineer..... | 4 | ... | 4 | 2 | ... | 2 | 6 | ... | 6 |
| Electrical Engineer..... | 1 | ... | 1 | 1 | ... | 1 | 2 | ... | 2 |
| Mechanical Engineer..... | ... | ... | ... | 1 | ... | 1 | 1 | ... | 1 |
| Total Advanced Degrees..... | 53 | 9 | 62 | 48 | 16 | 64 | 101 | 25 | 126 |
| Bachelors' Degrees: | | | | | | | | | |
| College of Agriculture: | | | | | | | | | |
| Bachelor of Science..... | 29 | 1 | 30 | 27 | 5 | 32 | 56 | 6 | 62 |
| College of Arts and Sciences: | | | | | | | | | |
| Bachelor of Arts..... | 40 | 11 | 51 | 52 | 16 | 68 | 92 | 27 | 119 |
| Bachelor of Science..... | 24 | 5 | 29 | 45 | 1 | 46 | 69 | 6 | 75 |
| College of Education: | | | | | | | | | |
| Bachelor of Arts..... | 2 | 19 | 21 | 8 | 24 | 32 | 10 | 43 | 53 |
| Bachelor of Science..... | 8 | 9 | 17 | 4 | 8 | 12 | 12 | 17 | 29 |
| College of Engineering: | | | | | | | | | |
| Bachelor of Science..... | 42 | ... | 42 | 36 | 1 | 37 | 78 | 1 | 79 |
| College of Home Economics: | | | | | | | | | |
| Bachelor of Science..... | ... | 19 | 19 | ... | 9 | 9 | ... | 28 | 28 |
| Total Bachelors' Degrees..... | 145 | 64 | 209 | 172 | 64 | 236 | 317 | 128 | 445 |
| Certificates: | | | | | | | | | |
| Teachers' Diplomas..... | 25 | 36 | 61 | 24 | 43 | 67 | 49 | 79 | 128 |
| Certificates in Industrial Education..... | 3 | ... | 3 | 4 | ... | 4 | 7 | ... | 7 |
| Total Certificates..... | 28 | 36 | 64 | 28 | 43 | 71 | 56 | 79 | 135 |

GEOGRAPHICAL DISTRIBUTION OF STUDENTS

Resident Students Registered at College Park During the Regular Academic Year By States and Foreign Countries

| | 1930-1931 1931-1932 1932-1933* | | | | 1930-1931 1931-1932 1932-1933* | | | |
|-----------------------------|--------------------------------|-------|-------|--|--------------------------------|-------|-------|-------|
| Alabama | 1 | 1 | 2 | | North Carolina | 2 | ..... | 3 |
| Arizona | 1 | ..... | ..... |  | Ohio | 3 | 4 | 2 |
| California | 2 | 2 | 1 | | Oregon | 1 | 1 | ..... |
| Colorado | 1 | ..... | ..... |  | Pennsylvania | 32 | 32 | 23 |
| Connecticut | 10 | 12 | 7 | | Rhode Island | 2 | 1 | 1 |
| Delaware | 7 | 10 | 8 | | South Carolina | 1 | 1 | 1 |
| District of Columbia† | 411 | 569 | 626 | | South Dakota | 5 | 4 | 2 |
| Florida ..... | ..... | 2 | 2 | | Tennessee | 1 | ..... | ..... |
| Idaho ..... | ..... | ..... | 1 | | Texas | 3 | 1 | 1 |
| Illinois ..... | ..... | 1 | 2 | | Utah | 1 | 1 | 1 |
| Indiana | 4 | 3 | 4 | | Vermont ..... | ..... | ..... | 1 |
| Iowa | 2 | 2 | 2 | | Virginia | 17 | 25 | 22 |
| Kansas | 2 | 1 | ..... |  | Washington | 3 | 4 | 3 |
| Kentucky | 1 | ..... | ..... |  | West Virginia | 2 | 5 | 3 |
| Louisiana | 1 | 1 | ..... |  | Wisconsin | 1 | ..... | ..... |
| Maine | 1 | 2 | 2 | | Wyoming ..... | ..... | 1 | ..... |
| Maryland | 955 | 1,082 | 1,119 | | Canal Zone ..... | ..... | 1 | ..... |
| Massachusetts | 7 | 7 | 5 | | Puerto Rico | 1 | 2 | 1 |
| Michigan | 2 | 1 | 2 | | Philippine Islands ..... | ..... | ..... | 1 |
| Minnesota ..... | ..... | ..... | 2 | | Argentina ..... | ..... | 1 | ..... |
| Mississippi | 2 | 2 | 1 | | British Columbia ..... | ..... | 1 | 1 |
| Missouri | 3 | 1 | 1 | | Ecuador | 1 | 1 | ..... |
| Montana ..... | ..... | ..... | 1 | | Mexico | 2 | ..... | ..... |
| Nebraska | 1 | 3 | 2 | | Nicaragua | 1 | 1 | ..... |
| New Jersey | 41 | 41 | 38 | | Totals | 1,571 | 1,871 | 1,933 |
| New York | 37 | 41 | 38 | | | | | |

*Figures for 1932-33 are not complete; second semester registration not included.

† Number paying taxes in Maryland not known.

Registrar's Report (BALTIMORE)

W. M. HILLEGEIST, *Registrar.*

THE following tables show the student enrollment for 1930-31, 1931-32, and preliminary enrollment for 1932-33; the officers of instruction for 1930-31 and 1931-32; and the degrees and certificates conferred in 1931 and 1932. This data is given for the Schools of Dentistry, Law, Medicine, Nursing, and Pharmacy.

Personnel of the registrar's office numbers three—the registrar, a secretary and a junior stenographer. The office was moved in 1932 to the second floor of the Administration Building, the former School of Law Building. The two rooms are satisfactory, except that they lack necessary floor space for expansion and for housing some of the equipment provided recently with a view to increasing efficiency.

Decided progress has been made in the installation of a centralized system of students' permanent records and the inauguration of a system (in triplicate) of student bills and term reports. New record forms for the Schools of Dentistry, Law, and Pharmacy have been printed and are in use. It is anticipated that they will be in use by the School of Medicine in the near future.

STUDENT ENROLLMENT (BALTIMORE SCHOOLS)

| | 1930-31 | | | 1931-32 | | | 1932-33 (First Semester) | | |
|---------------------------|---------|-------|--------|---------|-------|--------|-----------------------------|-------|-------|
| | Men | Women | Total | Men | Women | Total | Men | Women | Total |
| School of Dentistry | 408 | 3 | 411 | 422 | 2 | 424 | 424 | 4 | 428 |
| School of Law | 145 | 8 | 153 | 169 | 8 | 177 | 180 | 6 | 186 |
| School of Medicine | 406 | 7 | 413 | 419 | 7 | 426 | 402 | 6 | 408 |
| School of Nursing ..... | ..... | 112 | 112 | ..... | 121 | 121 | ..... | 111 | 111 |
| School of Pharmacy | 327 | 30 | 357 | 350 | 19 | 369 | 338 | 21 | 359 |
| Total for Year..... | 1,286* | 160 | 1,446 | 1,360‡ | 157 | 1,517 | 1,344¶ | 148 | 1,492 |
| Duplicate | | | 1* | | | 2‡ | | | 1¶ |
| Net Total | | | 1,445† | | | 1,515§ | | | 1,491\|\| |

*One graduate student registered in the Schools of Medicine and Pharmacy.

†Fifteen graduate students registered in the Schools of Medicine and Pharmacy are registered also in the Graduate School, College Park.

‡Two graduate students registered in the Schools of Medicine and Pharmacy.

§Twenty-four graduate students registered in the Schools of Medicine and Pharmacy are registered also in the Graduate School, College Park.

¶One graduate student registered in the Schools of Medicine and Pharmacy.

||Twenty-six graduate students registered in the Schools of Medicine and Pharmacy are registered also in the Graduate School, College Park.

DEGREES AND CERTIFICATES CONFERRED (BALTIMORE SCHOOLS)

| | 1931 | | | 1932 | | | Total for Biennium | | |
|-----------------------------------|-------|-------|-------|-------|-------|-------|--------------------|-------|-------|
| | Men | Women | Total | Men | Women | Total | Men | Women | Total |
| Honorary Degrees: | | | | | | | | | |
| Doctor of Laws..... | 1 | ..... | 1 | ..... | ..... | ..... | 1 | ..... | 1 |
| Doctor of Science..... | ..... | ..... | ..... | 2 | ..... | 2 | 2 | ..... | 2 |
| Total Honorary Degrees..... | 1 | ..... | 1 | 2 | ..... | 2 | 3 | ..... | 3 |
| School of Dentistry: | | | | | | | | | |
| Doctor of Dental Surgery..... | 54 | ..... | 54 | 63 | ..... | 63 | 117 | ..... | 117 |
| School of Law: | | | | | | | | | |
| Bachelor of Laws..... | 29 | ..... | 29 | 33 | 1 | 34 | 62 | 1 | 63 |
| *Certificates of Proficiency..... | 3 | ..... | 3 | 1 | 1 | 2 | 4 | 1 | 5 |
| School of Medicine: | | | | | | | | | |
| Doctor of Medicine..... | 87 | 4 | 91 | 101 | 1 | 102 | 188 | 5 | 193 |
| School of Nursing: | | | | | | | | | |
| Graduate in Nursing..... | ..... | 28 | 28 | ..... | 24 | 24 | ..... | 52 | 52 |
| School of Pharmacy: | | | | | | | | | |
| Bachelor of Science in Pharmacy | 22 | 1 | 23 | 34 | 2 | 36 | 56 | 3 | 59 |
| Graduate in Pharmacy..... | 72 | 13 | 85 | 69 | 2 | 71 | 141 | 15 | 156 |
| Total Professional Degrees | 267 | 46 | 313 | 301 | 31 | 332 | 568 | 77 | 645 |
| and Certificates | 268 | 46 | 314 | 303 | 31 | 334 | 571 | 77 | 648 |
| Total All Degrees..... | 268 | 46 | 314 | 303 | 31 | 334 | 571 | 77 | 648 |

*Special law students are admitted (under the rules of the Association of American Law Schools) with less than two years of college credit. They may not exceed in any year ten per cent of the average number of first-year students during the preceding two years, and they must show some special qualifications for the study of law. They are not candidates for the degree of bachelor of laws, but are awarded certificates of proficiency on satisfactory completion of the prescribed course of study.

| | 1930-31 | 1931-32 | 1932-33 | | 1930-31 | 1931-32 | 1932-33 |
|---------------------------|---------|---------|---------|--------------------------|---------|---------|---------|
| California | 3 | 3 | 2 | South Dakota | 1 | 1 | 2 |
| Colorado | 1 | 1 | 1 | Utah | 2 | 2 | 2 |
| Connecticut | 66 | 62 | 58 | Vermont | 5 | 3 | 6 |
| Delaware | 11 | 8 | 12 | Virginia | 27 | 24 | 17 |
| District of Columbia..... | 4 | 9 | 16 | Washington | 1 | ..... | 1 |
| Florida | 2 | 3 | 2 | West Virginia | 39 | 39 | 33 |
| Georgia | 2 | 1 | ..... | Wisconsin | 1 | 2 | 1 |
| Illinois | 1 | 1 | ..... | British West Indies..... | 3 | 2 | 2 |
| Indiana ..... | ..... | ..... | 2 | Canada | 1 | 2 | 1 |
| Ireland ..... | ..... | 2 | ..... | Canal Zone ..... | ..... | 1 | 3 |
| Kentucky ..... | ..... | 6 | ..... | China | 2 | 2 | 2 |
| Maine | 6 | ..... | 5 | Colombia, S. A. .... | ..... | 1 | ..... |
| Maryland | 776(1) | 850(2) | 884(3) | Costa Rica ..... | ..... | 1 | 1 |
| Massachusetts | 22 | 25 | 22 | Honduras ..... | ..... | 1 | ..... |
| Michigan ..... | ..... | 1 | 1 | Mexico | 1 | ..... | ..... |
| Minnesota | 1 | ..... | ..... | Nicaragua | 3 | 1 | ..... |
| New Hampshire | 1 | ..... | 1 | Puerto Rico | 12 | 10 | 5 |
| New Jersey | 172 | 191 | 185 | Santo Domingo ..... | ..... | ..... | 1 |
| New York | 110 | 98 | 83 | | | | |
| North Carolina | 42 | 50 | 42 | Totals | 1,446 | 1,517 | 1,508 |
| Ohio | 8 | 5 | 4 | Duplications | 1(1) | 2(2) | 2(3) |
| Oregon ..... | ..... | 1 | ..... |  | 1,445 | 1,515 | 1,506 |
| Pennsylvania | 103 | 89(2) | 84(3) | | | | |
| Rhode Island | 11 | 14 | 22 | | | | |
| South Carolina | 6 | 5 | 5 | | | | |

Tabulation of Enrollment According to Maryland and "Elsewhere" in the Baltimore Schools For 1930-31, 1931-32, 1932-33.

| | SUMMARY BY SCHOOLS | | | Dentistry | | |
|----------------|--------------------|---------|---------|-------------------|---------|---------|
| | Medicine | | | Law | | |
| | 1930-31 | 1931-32 | 1932-33 | 1930-31 | 1931-32 | 1932-33 |
| Maryland..... | 165 | 172 | 189 | 140 | 172 | 182 |
| Elsewhere..... | 248 | 254 | 224 | 13 | 5 | 6 |
| | 413 | 426 | 413 | 153 | 177 | 188 |
| | Pharmacy | | | Nursing | | |
| | 1930-31 | 1931-32 | 1932-33 | 1930-31 | 1931-32 | 1932-33 |
| Maryland..... | 332 | 350 | 347 | 57 | 59 | 58 |
| Elsewhere..... | 25 | 19 | 18 | 55 | 62 | 53 |
| | 357 | 369 | 365 | 112 | 121 | 111 |
| | | | | Duplications..... | | |
| | | | | | 1* | 2† |
| | | | | Total | | |
| | | | | 1930-31 | 1931-32 | 1932-33 |
| | | | | 776 | 850 | 884 |
| | | | | 670 | 667 | 624 |
| | | | | | | |
| | | | | 1,446 | 1,517 | 1,508 |
| | | | | 1* | 2† | |
| | | | | 1,445 | 1,515 | 1,506 |

*Maryland. †1 Maryland, 1 Pennsylvania.

OFFICERS OF INSTRUCTION (BALTIMORE)

| | 1930-31 | | | | | 1931-32 | | | | | | |
|----------------------------|-----------|------|----------|----------------|----------|---------|-----------|------|----------|----------------|----------|-------|
| | Dentistry | Law | Medicine | Nursing | Pharmacy | Total | Dentistry | Law | Medicine | Nursing | Pharmacy | Total |
| Professors Emeriti | 2 | .... | 10 | .... | 1 | 13 | 2 | 1 | 8 | .... | 1 | 12 |
| Professors | 14 | 5 | 53 | 1 | 9 | 82 | 14 | 4 | 54 | 1 | 8 | 81 |
| Associate Professors ..... | .... | .... | 25 | .... | 2 | 27 | .... | 1 | 29 | .... | 2 | 32 |
| Assistant Professors | 12 | .... | 14 | 1 | 6 | 33 | 13 | .... | 12 | 1 | 6 | 32 |
| Lecturers | 3 | 19 | 1 | .... | .... | 23 | 3 | 13 | 1 | .... | .... | 17 |
| Associates ..... | .... | .... | 49 | .... | .... | 49 | .... | .... | 48 | .... | .... | 48 |
| Instructors | 36 | .... | 49 | 5 | 7 | 97 | 40 | .... | 43 | 5 | 7 | 95 |
| Assistants | 2 | .... | 59 | 2 | 13 | 76 | 3 | .... | 67 | 2 | 16 | 88 |
| Total | 69* | 24 | 260 | 9 | 38* | 400 | 75† | 19 | 262 | 9 | 40† | 405 |
| | | | | Duplicate..... | | 1† | | | | Duplicate..... | | 1† |
| | | | | | | 399 | | | | | | 404 |

*Seventeen faculty members are listed also in the College Park section of the Officers of Instruction in the general catalog. This is because of the co-operative instructional arrangement between the Schools of Dentistry and Pharmacy, and the College of Arts and Sciences.

†Nineteen faculty members are listed also in the College Park section of the Officers of Instruction in the general catalog. This is because of the co-operative instructional arrangement between the Schools of Dentistry and Pharmacy, and the College of Arts and Sciences.

‡Professor of Embryology and Histology (Dentistry) is also Associate Professor of Medical Jurisprudence (Medicine).

Additional Officers of Instruction:

School of Pharmacy, Advisory Dean, 1 (is also Professor Emeritus of Chemistry, School of Dentistry).
Hospital Superintendent, 1 (has rank of Professor).
College of Education (College Park), Professor of Industrial Education, 1.

Military Department

ALVAN C. GILLEM, JR., *Major, Infantry, (D. O. L.), P. M. S. & T.*

PERTINENT Army regulations, together with a program of instruction emanating from the War Department, form the basis of all instruction conducted by this department.

The University of Maryland has maintained for some years an Infantry Unit of the Senior Division, Reserve Officers' Training Corps. The instruction given by the Military Department is grouped into two courses, *i. e.*, Basic and Advanced. The student pursues for the first two years of his college life the Basic Course, and, provided he completes this course satisfactorily and is able to meet the other conditions involved, he may then elect and enroll in the Advanced Course.

Military education as conducted at this institution has no connection with military service. The student who completes the Basic Course is under no obligation to serve in war. He has, however, increased his value to the community, State, and country, as the object of this course is to afford to students enjoying the privileges of State and Federal-aided education an opportunity to be trained for positions involving leadership, either in the State or nation.

During the first two years, the student gains a comprehensive knowledge of the principles of personal hygiene and first aid. This is the only department conducting courses of this nature at the University of Maryland. The importance of the subject matter covered lies in the fact that such knowledge is useful throughout life, irrespective of vocation. Physical training of the individual and group likewise constitutes an important phase of basic course training.

Citizenship, with its privileges and responsibilities, is studied and linked with the policies developed throughout the history of this nation. The elements of military tactics are taught and practiced to the end that a more rounded and useful member of the body politic may be instructed and graduated.

The Advanced Course, elective, is designed to give additional instruction in those subjects which are deemed essential. The objective of this course is stated in the catalog of the University.

The average strength of the unit per year for the last two years has been approximately as follows: Seniors, 25; juniors, 27; sophomores, 215; freshmen, 337. These averages show a marked increase over the last report rendered.

The entire unit is organized as a regiment of two battalions, each consisting of four companies. A more desirable organization would be a three-battalion regiment with battalions of three companies each. It has not been practicable to so organize, due to shortage of Advanced Course students. The number permitted in the Advanced Course is limited and based on funds allocated by the Federal Government. An endeavor should be made to secure additional vacancies from the Federal Government in order that the regiment may be more suitably organized and properly officered.

No numerical changes have occurred in the Regular Army personnel on duty at the University during the biennium.

Class and store room facilities are excellent and it is believed that the present plant in the gymnasium compares most favorably with any institutional set-up. Drill grounds for outdoor instruction are sufficient.

Military instruction is on a par with other work of the University and credits are granted for work accomplished on the same basis as for other departments. The results attained have been such as to accord the rating of "Excellent" by the War Department during the biennium.

R. O. T. C. Unit

All male students who are physically fit and over 14 years of age and who will be citizens of the United States at maturity are eligible for admission to the R. O. T. C. Basic Course. Selection of students for the Advanced Course is made by the President of the University upon recommendation of the P. M. S. & T. and with the approval of the Dean concerned. A student who completes the Advanced Course is tendered a commission in the Officers' Reserve Corps. During the last two years, fifty graduates of this course have been so commissioned. Graduates of the Advanced Course are trained to fit into the defense plans of the nation and for capable leadership.

The only recommendation submitted is that no change be made in the rules and regulations governing the functioning of the present R. O. T. C. Unit.

Buildings and Grounds

H. L. CRISP, *Superintendent.*

FIVE buildings have been added at College Park since the last report. They are Ritchie Coliseum, Girls' Field House, Margaret Brent Hall, Horticulture Building, and an addition to the Engineering Building.

The Horticultural Department was moved into its new building. A portion of the old building was remodeled as quarters for the Christian Association and Student Publications. Partitioning, painting, moving and building of equipment made possible the utilization to best advantage of the increased space made available for the Engineering Department by addition to its building. After equipment rooms were outfitted and offices were painted, the Military Department, formerly housed in the basement of the boys' dormitories, was moved to the gymnasium.

The old Library was remodeled. It is now used as an Arts and Science class building on the first floor, with offices for Dean of Women and girls' rest room on second floor.

The auditorium, located in the Agricultural Building, was remodeled, with changes in stage, heating, ventilating, seating, etc. It is now a very presentable room. A chapel large enough for the activities of the institution is needed.

Asphalt tile flooring was laid in a suite of rooms in Calvert Hall and the rooms were decorated and furnished as reception rooms for the boys. Also, rooms were outfitted, one suite in Calvert Hall and one in Silvester Hall, for matrons employed this year in an effort to give the boys' dormitories a little more home-like atmosphere.

A new and larger electric meter house, equipment and relocation of primary wires were made necessary because of increased load caused by new buildings; also, connection with 8-inch water main to increase pressure for new buildings.

The usual amount of renovation was accomplished. Some items were, laying several asphalt tile floors; painting exterior and interior of Practice House, exterior of Gerneaux Hall, sash and cornice of Dairy Building; considerable painting in Dining Hall, Engineering Building and new Library; renewing with brass pipe the hot water lines in Calvert Hall; new flashing, down-spouting and guttering on Morrill Hall; new down-spouting and guttering on Gerneaux Hall.

The Institution has been provided with a modern telephone switch-board with Berwyn, Hyattsville and Greenwood trunks, operated 16 hours a day.

Twelve electric drinking water fountains were added to the four in use, so that there is now one in most of the main buildings; a few are yet to be supplied.

New buildings always mean much draining, grading, seeding and sodding on the campus. With five buildings, the campus labor was more than busy. Parking spaces were also improved and enlarged.

A brick wall was placed along the front of the campus and concrete walks were laid in front of it; also concrete walks were laid from the main gate to Chemistry Building, from main gate to Silvester Hall, and from the new Library to the Engineering Building. The Amisite roads on the campus were extended from the county road past the Horticultural Building to Margaret Brent Hall, the new girls' dormitory. A concrete road was laid from the Washington-Baltimore boulevard east as far as the heating plant.

This department still needs a service building, additional 8-inch water lines, new floors for the Agricultural Building and Morrill Hall, more concrete walks and campus lights, along with other things.

Feed, Fertilizer and Lime Inspection Service

DR. LESLIE E. BOPST, *Associate State Chemist.*

THIS department has assigned to it the enforcement of State Feed, Fertilizer and Lime Laws. Borne of a definite public necessity, these laws continue to be actively enforced because that necessity still exists. In brief, they provide for prevention of the manufacture and sale of adulterated and misbranded products, thus protecting the consumer from economic fraud and the honest producer from illegal competition. While there have been changes in regulatory procedure resulting from more extensive experience in enforcement work, enforcing officials are concerned now, as they were ten years ago, with removing from the trade products found to be in violation of the law, and prosecuting violators of the statutes. Notwithstanding great improvement in the quality of feed, fertilizer and lime, there is, as in every industry, a minority of operators who, through carelessness or deliberation, still are producing misbranded and adulterated products. Continued vigilance is necessary.

World-wide troubled economic conditions caused some decrease in the past biennium's total volume and value of products coming within our jurisdiction. Nevertheless the department's task was not a light one. With a curtailed appropriation for enforcement of these several statutes, the organization was pushed to continue regulatory control over a large number of products subject to the laws' provisions.

The biennial report for 1930 explained in detail the project plan of enforcement. This plan, which need not be repeated at length, is designed to guarantee the highest possible protection to the public with the funds available by concentrating on forms of violation causing

most damage. The number of prosecutions instigated during the past fiscal year under the Feed Act has more than doubled.

Condensed Statement of Control Activities

In the interests of clarity and convenience, the report is presented under the general sub-heading of the industries controlled.

FEEDS

| | 1931 | 1932 | Total |
|--|-------------|-------------|-------------|
| Samples collected by inspectors..... | 2,098 | 2,156 | 4,254 |
| Samples forwarded by Md. residents | 213 | 186 | 399 |
| Licenses issued (brands licensed)..... | 2,063 | 1,988 | 4,051 |
| Feed prosecutions instigated..... | 5 | 23 | 28 |
| Receipts in license fees | \$35,060.00 | \$33,260.00 | \$68,320.00 |

FERTILIZER

| | 1931 | 1932 | Total |
|--|-------------|-------------|-------------|
| Samples collected by inspectors..... | 1,162 | 1,126 | 2,288 |
| Samples forwarded by Md. residents | 100 | 146 | 246 |
| Licenses issued (brands licensed)..... | 872 | 768 | 1,640 |
| Receipts from fees and tonnage tax ... | \$20,878.30 | \$17,188.52 | \$38,066.82 |

LIMES

| | 1931 | 1932 | Total |
|--|------------|------------|------------|
| Samples collected by inspectors..... | 147 | 112 | 259 |
| Samples forwarded by Md. residents | 54 | 109 | 163 |
| Licenses issued (brands licensed)..... | 89 | 87 | 176 |
| Receipts in license fees | \$1,335.00 | \$1,305.00 | \$2,625.00 |

As the foregoing tables show approximately 6,801 samples of feed, fertilizer and lime were collected and examined. In addition, gratuitous examinations were made upon 808 samples which were forwarded by residents of the State. In many cases examinations consisted only of chemical analyses, but a large percentage of the samples analyzed required, also, supplementary microscopical examination. The total number of samples given includes those upon which legal actions were based, as well as those of an informative character, collected as a guide for determining the necessity for regulatory operations.

In addition to the samples listed, inspections were made of importations of beet pulp from Holland; of wheat bran and wheat middlings from the Argentine; of whale meal from South American waters; and fish meal from Southern ports. Inspections resulted in condemnation and entry refusal of hundreds of bags of these commodities which were found to be moldy or damaged by sea water, thus rendering them unfit for animal consumption.

Numerous factory inspections were made of plants engaged in production of feeding materials, particularly those supplying tankage and

meat meals. Constructive suggestions offered during these inspections often resulted in improvement in the quality of goods being marketed.

Following a new idea in the human food industry, many feed manufacturers are placing upon the market materials which are alleged to improve the health of animals. These products have been sold under suggestive designations such as "Vita-Life Food," "Nature's Perfect Health Food," etc., and are too often accompanied by false and extravagant claims. Much time and effort has been spent in keeping the names and claims for these products in line with their actual virtues.

An extremely heavy burden was placed upon the technical forces of the Inspection Service by an opinion of the Attorney General last year, to the effect that materials sold chiefly for their vitamin content must be considered as subject to feed law requirements.

The ordinary feed analysis in terms of protein, fat and fiber, means nothing when applied to cod liver oils or similar products whose value is measured in terms of their vitamin D potency. This vitamin is most commonly deficient in ordinary rations and is also called the anti-rachitic vitamin. As its name implies, its presence in rations containing phosphorus and calcium tends to prevent rickets, as it helps to deposit these two elements in the form of calcium phosphate in bones.

Biological methods have been found to be the only satisfactory means of assaying any supposedly vitamin D carrying material. Due to a very small increase in the budget it was possible to secure only the part-time services of a biological chemist. Tests were conducted by this chemist which consisted in feeding baby chicks a basal ration which, when used as the only source of feed, will produce rachitic conditions within five weeks. The control ration is supplemented in other pens with very small but definite additions of the vitamin D materials under test. At the end of a five-week period, all of the birds are killed and the upper leg bones are removed from each chicken. The ash content of one of each pair of leg bones is determined and compared with those of the control birds. An estimate of the relative potency of an oil, in vitamin D, can then be made from the average bone ash contents of the groups receiving the oils at various levels. Biological determinations of this nature are not as accurate as chemical determinations for protein, fat and fibre in other feeds. Variations obtained within the groups are sometimes fairly large, which makes it necessary to always use averages for comparative purposes.

In addition to the work performed by the Feed Inspection Service in the regulation and control of feeding commodities, the College of Agriculture conducts research on feeding problems that arise in the dairy, livestock and poultry industries. For report on this work see page 23.

Publications

This service is required by law to publish in bulletin form the record of inspections obtained on the various commodities analyzed. Publication of this statistical data is also supplemented with such comment and discussion as is deemed helpful to those particularly interested in production, as well as use of feed, fertilizer and lime. Certain of these publications are being used to supplement textbooks in agricultural high schools. They also are being used as references by agricultural experiment stations. Their popularity is well evidenced by the requests that are received for copies and by the favorable comment noted in newspapers, agricultural journals and the farm press.

Conclusion

Officials of the Feed, Fertilizer and Lime Inspection Service have continued to exercise a systematic and effective supervision of the operations of manufacturers and of the materials produced. Although the work now is not as sensational as previously, it is of no less concern to the economic welfare of the State. That constant vigilance is still necessary is evidenced by the fact that there have been found hundreds of products not licensed, as well as 28 shipments of adulterated or misbranded materials. Adulterations today consist principally of the substitution of a cheap substance for some declared ingredient that costs decidedly more. Naturally these conditions require prompt attention to insure the protection contemplated, particularly by the feed law.

Considering the enormous increase in volume of manufactured products coming within the jurisdiction of these three laws, the proportion found adulterated is very small. It is necessary for control officials to be constantly on the alert to restrain that small portion of manufacturers who will take the chance to produce a dishonest product, or to jeopardize the health of animals by adulterating products, whether the adulteration is the result of carelessness or deliberate intent.

The future value of public service involved in regulation of intra-State traffic in fertilizers, feeds and limes depends upon the character of legal authority with which officials are clothed and the personnel and equipment at their command. Laws of the nature of those enforced by this service are not self-enforcing. No matter to what extent they may be faulty, it is certain that the public will derive no benefits from their provisions unless those upon whom the burden of administration has been placed are given facilities with which to work. Feed and fertilizer production under normal conditions has kept pace with the increase in population during the last ten years. In addition, there is a growing tendency on the part of agricultural interests to turn to the products of factories rather than to depend upon home-raised commodities. This has increased commerce in these materials more than a

per capita census would indicate. This situation challenges all resources, not only in effecting economies, but also in formulating operating policies. An important problem with which we are confronted today is not whether the authority, but rather whether funds can be found to support action. The State Inspection Service recognizes fully the prevalent need, especially at this time, for drastic economy in enforcement operations. Every one of our personnel is concerned about the expenditure of our budget, so as to acquire the maximum amount of public protection. Every effort is being made to so employ facilities at our command as to obtain greatest possible dividends in the interests of agricultural commodities.

State Department of Forestry

DR. F. W. BESLEY, *State Forester.*

THE Forestry Department is charged, under the forest laws, with responsibilities which may be conveniently grouped under seven heads: Forest Protection, State Forests, Public Shade Trees, Forest Nursery, Co-operative Work, Investigation and Research, and Education.

Forest Fires

One of the important duties of the Forestry Department, imposed by law, is protection of the 2,225,000 acres of woodland in the State from forest fires. In the discharge of this responsibility the department has built up a protection system, made more effective year by year as additional funds were made available.

The protection system is headed by an Assistant Forester, with three District Foresters in charge of the three districts of the State, assisted by seven District Forest Wardens; 17 forest fire towers, each manned by an observer; 20 forest guards to respond to fire calls; and some 600 forest wardens, paid by the hour for fighting fire. Each forest warden is authorized to employ any additional assistance that may be necessary in combatting fires.

There were 1,086 fires in 1931 which burned 28,525 acres of forest land, causing property damage of \$100,315. It cost \$19,909 to extinguish these fires, the counties paying half of the cost and the State the other half. This was 200 fires more than the five-year average, but the area burned was 35 per cent less, showing increased efficiency in controlling fires.

The year 1931, while not nearly so serious as that of 1930—the worst fire year we have ever had—was more severe than the average fire year. The good showing in fire control in reducing the acreage burned per

fire was due, in large measure, to additional fire observation towers and Forest Guards made possible by increases in funds for forest protection. The fire towers are the detection system for spotting fires quickly and the Forest Guards are the men who are ready to respond immediately to fire calls. Getting to a forest fire promptly with proper fire fighting equipment is the secret of success in reducing the size of fires. In this respect, the records show that Maryland was more successful in 1931 than any of her neighbor states having similar conditions. The fire figures for 1932 are not complete, due to delay in getting reports from the field, but even a better record than that of 1931 is indicated.

Adequate forest protection, which is generally interpreted as not over one-tenth of 1 per cent of the forest area burned over in any normal year, is our goal. Notable progress has been made in the past two years. While we must take care of the fires which occur in the most expeditious manner possible for protection of property, prevention of fires is the ultimate aim. The Forestry Department is making progress in this respect by fixing responsibility for fires whenever possible and making the careless and negligent pay the cost of extinguishing the fires they cause. The educational program of the department is also directed at fire prevention in an endeavor to make people generally "forestry minded."

Urgent Needs—The present budget allotment of \$8,000 "for labor in fighting forest fires" is barely sufficient for average years and, when very dry seasons like 1930 and 1931 occur, the allotment is very inadequate to pay the fire bills. Practically all of the appropriation for the fiscal year 1932 was exhausted before January 1 of that year in paying up deficits of 1931, with nothing left for the longer and more important spring season of 1932. By July of that year the department was indebted to the counties which had advanced money to the extent of \$4,734.65. This had to be carried over against the next year's appropriation, thus cutting down the amount available for fighting fires for 1933 by that amount. The Comptroller protested against this procedure and warned against a repetition.

Thus, there is the requirement of law to combat forest fires and much success has been attained in controlling them; on the other hand is the law against incurring deficits. A special appropriation is needed to pay the present deficit of \$4,734.65, in order that the department may open the next fiscal year with its fire funds intact to meet current obligations.

State Forests

The following table shows the location and extent of State Forests at present:

| Name | Acreage | County |
|--------------------|---------|-------------------------|
| Swallow Falls | 4,535 | Garrett |
| Savage River | 16,329 | Garrett |
| Potomac | 6,072 | Garrett |
| Green Ridge | 16,177 | Allegany |
| Fort Frederick | 189 | Washington |
| Pocomoke | 740 | Wooster |
| Patapsco | 1,116 | Baltimore-Howard |
| Cedarville | 2,631 | Charles-Prince George's |
| Doncaster | 1,157 | Charles |
| Seth Demonstration | 65 | Talbot |
| Total acres | 49,011 | |

The organic law creating the Forestry Department, in 1906, provided for acquisition of land for State Forests. In fact, the principal urge for creating a Forestry Department at that time was to take over and administer some 2,000 acres of forest land which was offered to the State as a gift, provided an agency were created for administering it.

In 1912 a specific appropriation of \$50,000 was provided for purchase of a State forest reservation along the Patapsco River, near Baltimore, and in the same year another appropriation of \$8,500 was made for purchase of Fort Frederick, near Big Pool, in Washington County, to preserve this historic shrine. From that time until 1929, no further appropriations were made for purchase of State forests, although some small areas were acquired by gifts.

In 1929 and 1930, \$50,000 was made available for the purpose and in 1931, \$25,000 additional. These appropriations were not made for the purchase of specific tracts, as in former cases, but to purchase lands anywhere in the State suitable for State forests. At the end of the fiscal year, 1932, there were 49,011 acres in State forests, in ten different units, located in nine counties, of which nearly 40,000 acres were purchased with the \$75,000 available during the last four years.

The needs and justification for State Forests are (1) A reserve timber supply. Maryland today is importing nine-tenths of the lumber that she uses, yet the present forest area, if properly managed and protected, would produce as much timber as is used in the State. (2) Protection and conservation of water supplies to prevent destructive erosion on mountain slopes. The private owner is not only unable, but cannot be expected to furnish this protection. It is a public function that State forests alone can solve. Two cities of Western Maryland—Westernport and Piedmont—are deriving their water supplies from the Savage River State Forest ten miles away. Other towns are looking to similar protected sources. (3) State forests have unlimited possibilities in providing recreation areas and hunting and fishing grounds for the people of Maryland and visitors from other States. The forest is the home of

wild life and under State ownership the areas are fully protected. Most of the State forests are in the mountainous section, with higher altitude, healthful surroundings, and beautiful scenery to attract those who like the out-of-doors. This service likewise is one that the private owner is unable to provide, and it must be brought about through State forest ownership.

Any one of these considerations would in itself be sufficient justification for acquiring State forests, but since all three can be combined in a single forest, a three-fold reason is presented.

Still another value of State forests is for demonstration, showing the people of the State correct methods of managing forests for highest permanent revenue. The lands acquired are suitable only for forest growth and can be purchased at low price, and, under proper forest management will bring not only good returns in timber production, but provide the other benefits enumerated above, constituting a profitable investment on the part of the State. The State forests now owned, and those to be acquired, will be held and administered for these purposes. The forests already acquired are bringing some revenue which is being applied for their improvement. During the past two years some improvement work has been done. Trails have been constructed to make them more accessible to the public, fire lines have been made and telephone lines built for better protection. A timber survey was completed for the purpose of developing a working plan on a portion of the Savage River Forest.

Needs—There are many small tracts within forest boundaries, or adjacent thereto, which are offered at extremely low prices, as well as tax sale lands coming up from time to time, that can be cheaply acquired and which would block in State forest areas. At least \$10,000 for the next two years should be made available for the purpose of taking advantage of these unusual opportunities.

Public Shade Trees

The department is charged under the roadside tree law with the protection of approximately 1,500,000 shade and ornamental trees standing within the limits of public highways or along the streets of incorporated towns throughout the State. There is no appropriation to carry on this work, so that it has to be self-supporting. The work, however, is handled under a permit system, requiring those who apply for permits to trim or remove trees to pay the cost of the necessary supervision, where permits are issued. Under this arrangement, the unnecessary cutting or mutilation of trees along highways is prevented, and the public interest in shade trees safeguarded. The department employs about sixty tree wardens to supervise the work. These men are chiefly

engaged in supervising tree trimming by the pole line companies and paid on an hourly basis. The cost of the work is charged to and collected from the pole line companies.

The Forestry Department, in connection with its other activities, gives free service to towns in handling their shade tree problems, giving advice, and working out detailed plans of management, including planting. Many towns have taken advantage of this free service and have carried out definite improvement work that has been recommended.

The department co-operates with organizations and individuals in furnishing at cost or less suitable trees for planting along roadsides. During the last two years 10,131 large trees have been furnished from the State Nursery for this purpose.

Forest Nursery

The State Forest Nursery, located on the grounds of the University of Maryland at College Park, covers approximately ten acres. The nursery was established in the spring of 1914 for the purpose of growing and distributing at cost small seedlings or transplants for reforestation. There are 180,000 acres of land in the State, mostly abandoned farm land unsuited for agricultural use, which are not naturally restocking in a satisfactory way. They are better adapted for growing timber than for any other use, but cannot be made fully productive for this purpose except by planting. The Forest Nursery is meeting that particular need by growing stock suitable for the purpose, distributed at cost of growing it, or less.

In 1914 the roadside tree law was enacted, placing the care and protection of trees along highways and streets, under the Forestry Department. The law also provided for the planting of trees, and early in 1915, the Nursery was extended to provide for growing larger sized trees for this purpose.

During 1931 there was distributed from the State Forest Nursery 281,400 trees for forest planting and 4,630 trees for roadside planting. In 1932 the distribution was 334,863 trees for forest planting and 5,501 for roadside planting.

Co-operative Work

More than two million acres of the State's two and one-quarter million acres of forest land is in private ownership, and, therefore, completely under private control. Any efforts or accomplishments in bringing about better forestry practice on these lands must be in co-operation with the private owners.

A highly developed system of co-operation has been practiced for many years with gratifying results. Any landowner of the State may, by

applying to the State Forester, have his woodlands examined, a plan of management prepared, and receive all of the expert assistance needed in handling his forestry problems. The service is without charge.

During the biennium, 53 timber tracts, involving 4,536 acres, were examined, upon application by the owners, and detailed reports for each, with specific recommendations, submitted. In the same period, special service was given in the case of six tracts, comprising 219 acres, where timber cutting was involved. In each of these cases the Forestry Department selected and marked the trees for cutting, under a definite plan, carefully estimating the timber to be cut, its value, and assisting the owner in finding a suitable market for it.

This co-operative work, in addition to giving valuable expert assistance to the woodland owner, results also in demonstrations of practical forest management and improvement in widely scattered sections of the State, and is thereby an effective means for promoting better forest management.

Investigations and Research

For the past two years a considerable amount of time has been devoted to examination and valuation of a large number of tracts of forest land offered for purchase for State forests. If, as a result of the examination, the land is found suited for State forest purposes and the price seems satisfactory, an option is taken for a sufficient length of time to make the surveys and search of title. Nearly all of the boundary surveys are made by District Foresters with local crews.

A crew of eight men worked for six weeks on the Savage River State Forest, preparing a type map covering approximately 10,000 acres, which is to be used as a basis for a detailed working plan of the forest.

Studies of the characteristics, growth, and uses of our important commercial tree species have been continued. The department, in order to be of greatest service to woodland owners who have timber to sell, and the timber buyers who are seeking timber supplies, keeps a list of sawmill and timber operators and a list of those who have notified the department that they have timber to sell. These lists are kept reasonably up to date by information obtained through our field men. In this way, the department serves as a clearing house for forest products and is of assistance to both buyer and seller.

Investigations of fire damage and improved methods of fire control, and development of improved fire fighting tools, have been continued. The 100 fire damage study plots established eight years ago for the purpose of determining effect of annual fires on forest growth, are inspected annually. These plots are in pairs, one plot being burned over each year, under control, while fire is kept out of the companion

check plot. This is planned as a ten-year experiment, with interesting results already apparent.

Studies conducted at the State Forest Nursery in control of tree diseases, and experiments in root pruning, both in seedlings and large transplanting stock, have resulted in improved methods by which the cost of growing forest planting and roadside planting stock has been greatly reduced. Experiments in different methods of packing and the use of different kinds of containers for shipping forest planting stock have been productive of economy and greater efficiency.

Search for the largest trees of each species to be found in the State has been continued. Trees of historical value also have been sought. There have been notable additions to the list of big trees in the past two years, bringing the total on record to about 900. This investigative project was started in 1925, in co-operation with the Maryland Forestry Association. Its purpose is to list, measure, and photograph the noted trees of the State and to publish the material when the records seem sufficiently complete.

Education

Forestry deals with a natural resource of great value, not only to the landowners who hold the property, but of value in many ways to the people of the State as a whole. Its wise use and perpetuation is, therefore, of great importance. The educational activities of the Forestry Department are, in consequence, directed toward this end.

During the biennium the State Forester and assistants gave 180 forest lectures, 99 of which were illustrated with lantern slides, before colleges, schools, civic associations, service clubs and a great variety of organizations, and presenting all phases of forestry work.

Exhibit material, illustrating all branches of forestry, has been freely loaned to schools, and other responsible public agencies. For this purpose, the department has certain regular exhibits and, in addition, has prepared special exhibits for specific purposes.

The *News Letter*, the official publication of the department, has appeared each month. This contains articles and news items, and is sent to Forest Wardens, public officials and newspapers. The latter use the material quite freely, giving it wide publicity.

The department serves as a bureau of information on all forestry matters for State Departments and others requiring advice and information. This part of the work takes a great deal of the time of the departmental staff in preparing special reports, holding conferences and answering inquiries by letter.

The Maryland Geological Survey

EDWARD B. MATHEWS, *State Geologist*.

THE full-time personnel consists of the secretary and chief clerk; all others, including the State Geologist, are on a per diem basis for such time as they are employed on State matters.

Expenses of operation consist of two main items—printing and travel. The organization is, therefore, conducted as economically as possible.

The function of the Geological Survey is primarily the accumulation and dissemination of information regarding physical features of the State. This is accomplished by issuance from time to time of special reports on specific geological formations, mineral resources of counties and preparation and publication of topographic maps showing the distribution of geological formations, agricultural soils, forests, and other sources of natural wealth. Since the entire State is surveyed topographically and a large portion covered by maps showing special features, the work of the Survey is becoming increasingly that of a bureau of information, involving a considerable correspondence and continuous work in keeping information regarding the State up to date.

Because of the shortage of water in 1930 and the opportunity to co-operate with the Hydrographic Branch of the United States Geological Survey and the establishment of a Water Resources Commission by the last Legislature, the Survey has devoted more than usual of its activities and expenditures to the study of surface and underground water supplies of the State. The results will be incorporated in part in the forthcoming report of the Water Resources Commission. Accumulation of information regarding our water supplies is of primary importance to development of the State, as we must have the facts to advise properly the methods of avoiding water shortages which have brought distress to every portion of the State during the last two years. No sound conclusions can be made without records extending over a term of years to eliminate any temporary peculiarities. Such investigations as stream gauging must be conducted continuously or the scattered results are of small value and may lead to erroneous conclusions.

Publication of the accumulated results of continued investigations and several major functions of the Survey have not been pushed as energetically the last biennium in order to save some of the appropriation. Material has constantly accumulated and, as soon as financial conditions warrant, this delayed work should be brought up to date as rapidly as possible.

Maryland State Weather Service

EDWARD B. MATHEWS, *Director.*

THE Maryland State Weather Service is largely supervisory, dealing with co-operative work carried on by Federal and State agencies in the study of climatic conditions affecting agriculture, aviation, and other activities. The assistants are maintained under a co-operative agreement with the Federal bureau and work under the direction of the Meteorologist who is the representative of the United States Weather Bureau in Baltimore. These assistants perform certain functions of their work to secure information of local interest to the State of Maryland, which is not supplied by the program of the Federal Service. The Director of the Weather Service and the Meteorologist serve without pay and the expense of publication is reduced to the minimum necessary for distributing a few comprehensive summaries of climatic conditions of the State.

The Extension Service

DR. T. B. SYMONS, *Director.*

THE biennial period ended September 30, 1932, has presented unusual problems to the Extension Service and has afforded unusual opportunities. Severe economic conditions and the efforts of rural people to adjust their operations and modes of living to their changed circumstances have resulted in greater demands upon extension workers than ever before. During these difficult times, the county agents and specialists are rendering greater service than at any other period. Never before has the value of a trained corps of workers who devote their efforts to serving people in all sections of the State, on their farms and in their homes, been so conclusively demonstrated. Several of the emergency measures could not have been carried out had it not been for the extension workers located in each county. Likewise, these workers proved of untold value in a number of cases in which it was necessary to obtain definite and dependable information regarding conditions, which would serve as a basis for determining important policies with regard to emergency needs and methods for meeting them.

As in former years, a county agent has been maintained in each county and assistant agents have been in service in five counties. All

counties have had also the services of home demonstration agents. Conditions have prevented expansion in the corps of specialists, except in response to the demand for work along certain lines to meet specific problems.

Attempts to evaluate the activities of the Extension Service have proved inadequate. By far the greatest value of the work is of such nature that it cannot be measured by monetary standards. No adequate estimate can be made, for example, of the value accruing from the improved standards of living, the mental development, increasing self-respect, initiative and leadership among men and women, which come from activities carried on by this branch of the University. The value of 4-H Club work with boys and girls cannot be expressed in terms of money, but certainly the benefit derived from wholesome and practical training afforded to approximately 8,000 rural boys and girls each year is enormous.

The value of aid given to farm organizations and community development is intangible, but none the less important. The Service co-operates closely with the Farm Bureau, the Grange, Women's Clubs and all other rural organizations. In many cases, the leadership that the Service has furnished has enabled farm organizations to function and grow. Assistance has been rendered the various groups of producers who were desirous of co-operating in marketing their products. Some of the farm marketing organizations are returning millions of dollars in extra income to producers each year. It is not possible to determine whether these organizations even would have been brought into existence, or the degree of success they would have achieved without the support afforded them by the Extension Service.

Discovery or development of an improved method, better varieties of crops, means for controlling destructive pests, and similar advances in agriculture, assume definite value in direct proportion to the extent they are put into practice. The Extension Service is the effective agency for putting into effect the results of research and experience. Activities of this nature can be evaluated somewhat definitely and a conservative estimate of the tangible value accruing to the people of the State annually would be in excess of \$2,000,000.

Economic Problems

At the beginning of this period, Maryland agriculture was suffering the effects of severe drought. Programs of county agents and specialists were greatly modified to make their services most effective in solving emergency problems. With the aid of leading farmers and farm women, a program of emergency measures was worked out and assistance was given by all members of the force in putting them

into operation. Members of the Service also had an important part in the work of State and county drought committees and assisted in formation of the Maryland Drought Loan Corporation, which was prepared to provide credit to those who needed assistance. Acts by the Federal Government, however, rendered unnecessary the operation of the Maryland Corporation.

The Extension Service, particularly the county agents, had an important part in helping farmers to obtain reduced freight rates on emergency shipments of hay, feed and livestock, granted by the railroads. A total of about 4,000 cars of hay and feed was shipped into Maryland under reduced rates and farmers of the State were saved approximately \$200,000. Details connected with issuing permits placed a heavy burden upon county agents and required much of their time, but afforded them additional opportunity to render a very valuable service.

Maryland farmers, especially dairymen, were assisted by the Service, with co-operation of the Maryland State Dairymen's Association, in securing feed during the period of extreme shortage caused by the drought. No accurate estimate can be made of the total amount saved the farmers by this service, but a conservative estimate would be \$5.00 a ton on the 1,155 tons of alfalfa hay and 910 tons of alfalfa meal which were obtained for them direct. In addition, many farmers were assisted in finding feed, but ordered it directly from sources of supply to which they were referred. Probably an additional 2,000 tons of feed were brought into the State more or less directly through efforts of these agencies.

Valuable service was rendered in the distribution of loans to farmers from funds made available by the Federal Government for assistance in the purchase of feed, fertilizer, etc. Information regarding such loans was disseminated widely and county agents assisted farmers in making out their applications.

Surveys made from time to time during the drought period were accepted by those responsible for emergency and relief measures as the most reliable guide to the needs and best methods for meeting them. At the request of Governor Ritchie, surveys were made of unemployment conditions and needs for measures to prevent distress.

Agricultural and Rural Home Program

Among the outstanding accomplishments was the development, with the co-operation of all farm organizations of the State and other agencies, of a long-time Agricultural and Rural Home Program. This program sets forth the lines along which the more important phases of the industry and home life may best develop during the next five

years and sets definite goals to be attained within that period. Each county is developing a program for the same period, specifically adapted to its needs and problems, and co-ordinated with the State program.

The time was especially opportune for launching a program of this nature. Established methods and systems of farming were considerably disorganized by the severe drought and unsettled economic conditions. Substantial adjustments were necessary on a large percentage of farms and it was vitally important that these adjustments be made with due consideration of conditions likely to exist a number of years hence, as well as the situation in the immediate future. Distinct progress has already been made toward many of the goals set in this program.

Marketing

Demands for assistance in the problems connected with marketing farm products have been so insistent that it has been necessary for practically all forces of the Extension Service to devote considerable effort to this important phase of agriculture.

Shipping point inspection was continued for the products inspected in former years and was extended to include raw tomato stock for canning factories. Assistance was given in the more widespread use of standard grades in marketing farm products.

Apple growers were confronted with a definite problem in connection with export requirements as regards spray residue and other factors. In co-operation with the State Horticultural Department and the State Board of Health, analyses were made of commercially produced apples. As a result of the care and thoroughness with which this work was done, no reports have been received indicating reversals of shipping point certificates.

A survey of conditions surrounding the marketing of nearby produce in Baltimore revealed a great need for better grading and packing practices among growers delivering produce to that market. Efforts are being made to induce growers to adopt better systems of grading and packing. Based upon information obtained from a similar survey of the egg market in Washington, a co-operative marketing organization was formed and is functioning with added profit to producers.

During the peach marketing season of 1931, the Extension Service in co-operation with other agencies, carried on a "Peach Time in Maryland" campaign. Because of the unusually large crop of peaches in Maryland and all other peach producing areas, it seemed certain that prices would be very low and there would be tremendous waste, unless a special effort were made to acquaint people with the situation.

Undoubtedly the effort resulted in considerably greater demand for Maryland peaches and was a benefit to both producers and consumers.

As in former years, the Service has given substantial aid to co-operative marketing associations of the State, all of which continued to operate successfully. Much assistance was given in the organization of the Eastern States Co-operative Livestock Marketing Association, which is affiliated with the National Association for marketing livestock co-operatively. It gives Maryland farmers facilities for co-operative marketing of their livestock.

A number of educational tours were conducted in co-operation with railroads, whereby producers of farm products were given an opportunity to see how produce is handled in the large terminal markets.

Farm Management

Necessity for greater attention to the management phase of farm operation resulted in greatly increased demand for work in this line. A specialist in farm management was added to the force in July, 1931, and a definite program of work was undertaken. A simple record book was prepared and a number of farmers in each county are being assisted in keeping adequate records of their farm business. Data pertaining to the organization and business analyses of more than five hundred Maryland farms were prepared as lecture material to illustrate economic factors affecting farm profits and to serve as a basis for sound farm reorganization.

Assistance and advice were given on a wide range of management problems, including farm leases, credit, changes in organization, etc.

Home Demonstration Work

Programs for work in this field have been developed with a view to being of greatest help to home-makers in meeting the changed economic conditions. Much of the effort has been directed to assisting farm women in their problem of maintaining the well-being of their families on reduced incomes. Special emphasis upon feeding the family from the farm and using to good advantage surplus farm products formed the basis for work in nutrition. Diets which could be provided at low cost and which adequately met nutritional requirements were demonstrated widely and were adopted by thousands of home-makers. Products of the farms and gardens were used and stored or preserved for winter use to a much greater extent than usual.

Assistance in clothing problems, in buying wisely and economically, in the study of materials on hand that could be utilized, in construction

processes, in selection, renovation and care, was in great demand. Reports show that 10,000 garments were made from new and reconditioned material following demonstrations in that line.

The Rural Women's Short Course has grown in interest and had an attendance of about seven hundred each year. It has become an outstanding event for rural women.

Boys' and Girls' 4-H Club Work

More boys and girls are being reached each year by 4-H club work and the number and variety of projects carried on by them is increasing.

An outstanding achievement in this biennium was the winning of highest honors in an international dairy cattle judging contest at Warwick, England, by a team of Maryland 4-H calf club boys. This is the fourth time that a team of Maryland boys has won the honor of representing the United States in the international contest and the third time it has brought home the cup, emblematic of championship.

The fundamental purpose and aim of the work is educational development along broad lines and its value from that standpoint vastly outweighs any dollars and cents value that may be placed upon it. However, the products produced by club members during the two years, by conservative estimates, are valued at considerably more than a half-million dollars.

The 4-H club work has received substantial support and co-operation from the Maryland State Bankers' Association, the Timonium Fair, and many other organizations and individuals.

Crops, Dairy and Livestock

To mention even the most important results achieved in the innumerable lines of work pertaining to production of field and garden crops, dairy, livestock, poultry, fruits and vegetables, forestry, canning crops, control of insects and diseases, and other problems arising in the widely diversified agriculture of Maryland would require many times the space available here. Such results are given more fully in the annual report of the Extension Service. While still carrying on the work designed to improve quality and yields and reduce production costs, the programs of Extension work and the projects undertaken have been made to meet the changed conditions to as great extent as available force and facilities permit.

For the first time, the Extension Service had the benefit of a full-time specialist in agricultural engineering and substantial progress was made in that important line of work. A project whereby each county

was supplied with a set of plans for farm buildings has resulted in requests for and distribution of about five hundred plans each year. About two hundred barns have been built according to these plans and \$400 per barn is a conservative estimate of the saving in cost, or a total of \$80,000. Aid was also given in drainage, water systems and a number of other engineering problems, including the use of electric power on the farm.

Interest in the growing of ornamental plants and other improvements of landscapes and home grounds increased so rapidly that it was necessary to expand the work in that line. Even with the service of an additional specialist, it was possible to render only a portion of the assistance desired. Requests for landscape assistance covered nearly all phases of the work; almost 2,500 enrolled in a flower growing project, and garden tours and exhibits enlisted the interest of thousands of people.

Radio Service

Radio has proved very effective in reaching large numbers of people in a minimum of time. Commercial broadcasting stations have co-operated heartily with the Service and would grant much more time if facilities were available for utilizing it to advantage. Two weekly periods of broadcast have been maintained regularly. One was from Station WBAL in Baltimore, and the other from Station WMAL in Washington. Lack of force for the preparation of material in suitable form for broadcast has prevented use of additional time on these stations and also time that might be used on Stations WRC and WJSV, in Washington.

Radio affords a means for bringing benefits of the University to large numbers of people. No charge is made by the commercial stations for the time granted. Material for effective broadcast differs from material for presentation in most other ways and requires special preparation. Additional facilities for preparation of suitable material for broadcast and further development of radio activities could be made with profit.

Negro Work

Four Negro workers have been maintained, two men and two women. A man and a woman worker are located on the Southern Eastern Shore and a man and woman worker are located in Southern Maryland. Work with colored people functions very much the same as with the whites.

The Eastern Branch of the University of Maryland, located at Princess Anne, co-operated in Extension activities and assistance was given in holding schools and short courses.

Adult Education

Demands for adult education have been met to the limit of available facilities. There is wonderful opportunity for development of this movement in the State. It is hoped that facilities in the future will make it possible to more adequately meet the increasing needs in this field.

Conclusion

This report presents a summary of some of the more important activities of the Extension Service. A more complete report is given in the regular annual report of the Service.

Splendid co-operation has been received from the farmers and farm women of the State; likewise, from the farm organizations, the Grange, Farm Bureau, and the various co-operative associations. Appreciation is also expressed for the co-operation of the boards of county commissioners, to Dr. H. J. Patterson and his associates for their assistance, and to the officials in charge of Extension work in the United States Department of Agriculture.

The State Horticultural Department

DR. T. B. SYMONS, *Director*.

IT has been shown by extensive records that damage to all crops caused by insects averages approximately 10 per cent of their value. Were it not for control methods being practiced, this loss would be more than double.

The State Horticultural Department provides definite duties and responsibilities for the State Entomologist and State Plant Pathologist with respect to control of insects and diseases. For purposes of co-ordination and greater efficiency in administration, the work is placed under supervision of the Director of the Extension Service. The emergency insect control fund has likewise been placed under the same direction and much of the work herein reported, particularly all the work relating to the Japanese beetle, was paid for from funds of the emergency insect control appropriation.

Work done in connection with control of one serious insect pest will serve as an example of the tremendous saving realized from efforts in this line. By using figures on the cost of control of Japanese beetle and quarantine costs in New Jersey, conservative estimates indicate that the protective and control policy practiced in Maryland saves more

than \$500,000 to the nurserymen, orchardists, and other industries each year the policy is maintained.

REPORT OF THE STATE ENTOMOLOGIST

The State Entomologist, Dr. Earnest N. Cory, is charged with administration over the entire field. His office conducted the several phases of work required by the State Horticultural Law; namely, regulatory work, control work, and, when necessary, experimental work.

General regulatory work has been concerned with protecting the public from purchasing infested or unhealthy plants, and preventing unwarranted spread of injurious insects. Experimental and control work has been concerned with aiding the public to produce healthy plants and at the same time to develop new and better ways for accomplishing this result.

Regulatory Work

Nurseries are inspected co-operatively by the departments of Entomology and Plant Pathology. The number of establishments requiring inspection continues to increase. Certificates were issued to 207 firms during 1931 and 234 firms in 1932. Nurseries, on the whole, are clean and in good condition; a few are somewhat neglected. Juniper scale and oyster shell scale were more prevalent than usual and special efforts were made to control them.

Special inspections consumed considerable time. During the biennial period, inspections involving more than 4,000,000 narcissus bulbs were made; 2,050 certificates were issued to cover their shipment. Occasionally nurserymen require special inspections and certificates to meet the demands of certain foreign countries, but usually the special demands come from individuals who have a limited number of plants for shipment. In 1931, 88 special certificates were issued for domestic purposes and 41 for foreign shipments. In 1932, 150 special certificates for domestic purposes and 40 for foreign shipments were issued.

Imported stock examined during the biennium totaled 103,000 seedlings and in addition to the above certification work, this office co-operated with the Bureau of Plant Quarantine in certifying materials on account of the Japanese beetle. During 1931 there were certified 2,697,731 packages of farm products, 16,329,677 plants, 8,148 bales of straw and moss and 1,423 car loads of sand and manure.

Control Work

Requests for control work are much greater than can be cared for adequately with present facilities. New problems are constantly appear-

ing, due to introduction of dangerous and destructive exotic insects into the State. Established pests require continued effort from year to year.

Attention was given to outbreaks of the following pests during the last two years: Codling moth, curculio, leafhoppers, flea beetles, sod web worms, Harlequin cabbage bug and aphids, together with many other normally minor insect pests, which appeared in injurious numbers. The following work has had special attention.

Japanese Beetle—The department has continued its policy of co-operating with the Bureau of Plant Quarantine in all phases of work pertaining to control of Japanese beetle. The program of work may be divided into four major activities: Scouting, control operations, quarantine, information and educational activities. Results indicate that this type of work gives promise of holding the beetles in check and preventing spread.

Control operations have consisted entirely of the use of traps, except in Colgate and vicinity, where grub population studies were made as preliminary steps to determine the advisability of liberating parasites. To prevent spread of the beetle, the State Horticultural Department, with the approval of the State Board of Agriculture, maintained a quarantine in co-operation with the Bureau of Plant Quarantine.

Maryland authorities have at all times insisted that only infested territory be regulated, and that free territory be protected to the utmost. This policy has been vigorously set forth at all hearings and conferences with the Federal administration. Maryland authorities last year succeeded in keeping 343,700 acres of land, or a territory larger than Montgomery county, from being placed under regulation.

Tick Investigation—Presence of spotted fever, as reported by the State Board of Health, made necessary the determination of the species and distribution of ticks in the State that might be vectors of the organism. A survey was made to determine the distribution, identification of species, life history and habits of ticks in Maryland.

Mosquito Survey and Control—A demonstration on mosquito control was carried on during the last two years at Chesapeake Beach. In addition, a survey of mosquito conditions in the tide-water areas was made in co-operation with the Federal Bureau of Entomology and at the request of the Del-Mar-Va Association and other interested parties. Valuable information was obtained, which can be used to advantage when mosquito control work is undertaken. Twenty-eight species were found, of which five were *Anopheles* mosquitos, two being new to our records.

Potato Tuber Moth—In past years, seed potato growers in Worcester and Somerset counties have suffered serious financial losses on several occasions due to the potato tuber moth. Valuable assistance in control of this pest has been rendered potato growers.

Apiculture—The bee industry has received considerable attention. Timely information was given to beekeepers pertaining to economical honey production. Progress was made in establishing honey bees in commercial orchards for pollinating purposes and increased interest is shown in this important phase of orchard management. American foul brood, the most devastating of bee diseases, was found in all counties in which inspections were made. Special attention was given to teaching beekeepers to detect and eradicate this disease.

Arsenical Residue—The department recommends a practical spray schedule designed to produce clean fruit and eliminate the arsenical residue problem. Recent investigations show that growers who followed this schedule consistently were protected in most instances from excessive arsenical residue. This department continues to co-operate with the Department of Markets in collecting samples for analysis by the State Department of Health.

European Corn Borer—The most outstanding new insect problem to develop during the last biennial period occurred with the discovery of the European corn borer the past year in Wicomico and Somerset counties.

Experimental Work

All phases of regulatory and control work are supported, from time to time, by investigational work, particularly those which pertain to control. Experimental work during the biennium included the following subjects: 1. Codling moth investigations; 2. Plum curculio investigations; 3. Potato tuber moth control; 4. Biology and control of apple leaf hoppers; 5. Mexican bean beetle control; 6. Control of scale insects on apples; 7. West Indian peach scale control; 8. Juniper scale control; 9. Mosquito survey and control; 10. Corn earworm bio-nomics.

REPORT OF THE STATE PLANT PATHOLOGIST

This report covers mainly the regulatory service; however, the work in plant pathology includes teaching, extension and research. Professor C. E. Temple serves as State Plant Pathologist and the various kinds of work are co-ordinated in an attempt to render effective service to the interests concerned and for the sake of economy.

Nursery Inspection and Certification

The number of nurseries has increased from an average for the last

biennium of 149 to 234 for 1932. Some new diseases, such as the strawberry crimp and white pine blister rust, have made it necessary to devote more time than heretofore to certification service.

White Pine Blister Rust Disease—This disease has been present in the states from Pennsylvania to New England and westward for several years, but it was not discovered in Maryland until 1931. It attacks two kinds of hosts: five-leaved pines and various species of *Ribes* which include both wild and cultivated varieties of currants and gooseberries. The disease cannot spread from one host to another of the same kind: it must alternate between white pine and the currants and gooseberries.

Steps have been taken, in co-operation with the United States Department of Agriculture, the State Forester and the State Entomologist to protect the nurseries that are growing white pines. This service will be extended, if funds are available, to include the forest white pine plantings and the indigenous white pines of the State, as well as nurseries growing white pines for ornamental planting.

Potato Wart and Shipment of Potatoes into Canada—By means of quarantine and use of varieties immune to potato wart, this disease has been confined to a few gardens in the Frostburg-Lonaconing area. In 1931 and again in 1932 each infested garden that had been planted to immune varieties for at least ten years, was tested for wart by planting in it a few hills of a susceptible variety. These hills were scattered among the immune hills and staked so that they could be dug separately and examined for wart. This work demonstrated that the fungus which causes the disease can live at least ten years in the soil in the absence of a susceptible host. To prevent spread of the disease from these new centers, the soil and diseased plants were carefully sterilized with formaldehyde. Since Maryland is still listed as one of the three States where the potato wart is known to exist, every shipment of potatoes from the State into Canada must bear a certificate that the tubers are free from the wart disease. These certificates are issued by the State Plant Pathologist.

Seed Certification

Certification of agricultural seeds in Maryland began with potatoes in 1915, as a service of the State Horticultural Department. The demand for certified seeds has increased and the service has been extended to include several varieties of potatoes, sweet potatoes, tomatoes, wheat, oats and barley. Several departments co-operate in the inspection and certification of seeds under the Seed Certification Board.

Wilt Resistant Peas

One of the projects that has been running for some time, has had as

its main object the production of varieties of canning peas better suited to Maryland conditions than the varieties now grown. A large number of pure-line, pedigreed strains, each from a single seed, have been produced. One of these, which is resistant to the wilt disease, has been named Maryland Alaska. Seed of this variety has been multiplied until there are 80,000 pounds. Maryland Alaska has been tested not only in Maryland but also in other states for both disease resistance and quality. It has stood the test of both and was listed first in the annual report of the Director of the New York Agricultural Experiment Station in a list of promising new varieties.

Three other very promising Alaska selections with a total of 58 pounds of seed have been sent to Mexico for multiplication during the winter of 1932. This stock will again be multiplied next summer in the West. The 58 pounds sent to Mexico recently should approximate 7,000 pounds of seed in a year from now.

Miscellaneous

Various other projects and kinds of work require attention; such as, correspondence, the identification of plant disease specimens, plant disease survey work in co-operation with the United States Department of Agriculture, etc.

MARYLAND STATE BOARD OF AGRICULTURE

Live Stock Sanitary Service

JAMES B. GEORGE, *Director.*

SUBSTANTIAL progress has been made during the last two years in eradication of tuberculosis, control of hog cholera, eradication and control of Bang's disease, control of less frequent diseases of domestic animals, and investigation and diagnosis of these diseases through inspectors and laboratories.

For the first time since the organization of the Board of Agriculture in 1916, a greater number of dairy cattle was shipped out of Maryland last year than was brought in from other states, which makes Maryland an exporting instead of, as formerly, an importing State. This should prove of great advantage to breeders here.

During the past year, live stock owners and breeders have shown lively interest in breeding and feeding beef cattle and swine, owing to the fact that Baltimore is an exceptionally good market for fat cattle. This industry has been greatly encouraged by the activities of the Extension Service, the Union Stock Yards Company of Baltimore, and the Maryland dealers in beef cattle, sheep, and swine. The annual Live Stock Show, held each year in Baltimore, has brought to the attention of farmers the importance of this industry as a source of revenue. This annual affair should be aided and encouraged in every way.

During the biennium, five cases of anthrax in cattle were reported and at once put under control, resulting in the loss of only the five animals. A few years ago this disease was a real menace to the cattle industry.

Scabies in sheep, which in former years caused serious losses, has been definitely placed under control and, so far as it has been possible to ascertain, there are no premises in the State where the disease has been known to exist that have not been cleaned up, properly disinfected and the disease put under control.

Rabies in dogs seems to be on the decrease, perhaps due to the fact that in cases where there is the slightest suspicion an animal may be affected there is prompt investigation and a report made to the State Department of Health.

Other comparatively minor diseases have not been of as frequent occurrence as formerly, probably owing to the fact that the inspectors

in the field, engaged in tuberculosis eradication and other major projects, are at hand to give attention and advice.

The private veterinary practitioners in Maryland work with this office in such a friendly spirit of co-operation that it is possible to keep in touch with conditions in all parts of the State. They seem to appreciate the facilities furnished them by the laboratories at College Park and send numerous specimens there for examination.

Bovine Tuberculosis

Dr. E. B. Simonds, Inspector in Charge of Tuberculosis Eradication, makes the following report for the biennium ending September 30, 1932.

Steady progress has continued in the reduction of infection and there are now under supervision 43,080 herds with 274,998 cattle. There are 13,100 herds with 116,987 cattle once tested and free of tuberculosis and 12,737 herds with 157,632 cattle are fully accredited. Five counties are accredited* and all of the cattle in 16 counties have been tested. In 12 of these counties all cattle have been retested. During the biennium, the tuberculin test has been applied to 39,992 herds with 430,958 cattle and 6,509 reactors were found.

Herds from which milk is shipped to market have been retested, so that these dairymen can meet their market requirements and have safe milk for home use. Continued appropriations of 13 counties to pay salaries and traveling expenses of inspectors have made it possible to keep working in these counties without interruption.

The maximum amount which can be paid for cattle which react to the tuberculin test has been reduced twice in the last two years. On July 1, 1931, the amount which could be paid for grades was reduced from \$35 to \$25 and on purebreds from \$70 to \$50 per head. On August 1, 1932, the amount for grades was reduced from \$25 to \$20 per head, with the payment on purebreds remaining the same. The amounts now paid are down to market values and few complaints have been received from cattle owners.

All reactors are shipped to the Union Stock Yards, Baltimore, where they are sold each day on competitive, sealed bids to the highest bidder. Although prices received for this class of cattle have been very low for the last two years, our reactors have brought considerably more than have reactors shipped in from other states and disposed of under several other plans.

Cleaning and disinfecting of premises where reactors are found are done by the owner under instruction of the veterinary inspector making

*The term "accredited" signifies that all cattle have been tuberculin tested, that infection of cattle did not exceed one-half of 1 per cent of the total, and that all reactors were removed.

the test. It is required that this work be done immediately upon removal of reactors and that a disinfectant approved by the United States Bureau of Animal Industry must be used. Many dairymen have learned that this work also aids in controlling other diseases.

More dairy cattle were sold out of the State last year than were brought in. Every effort is being made to encourage cattle buyers from without the State to come to Maryland to purchase cattle by helping them buy only animals of good quality. If these men are satisfied with the cattle bought, it is believed that they will buy cattle here in greater numbers and give Maryland cattle breeders an outlet for their surplus stock.

Often it is found necessary to use the veterinary inspectors employed on tuberculosis eradication in making investigations to protect the public health and live stock industry against other diseases, such as rabies, para-tuberculosis, contagious abortion, black leg, and anthrax.

Hog Cholera Control

Dr. Mark Welsh, Inspector in Charge of Hog Cholera Work, reports that the annual loss of swine from hog cholera has been reduced to approximately 18 hogs per 1,000. Prior to 1917, when hog cholera control work was started, losses from this disease amounted to approximately 72 hogs per 1,000. There has been a gradual lowering in the number of outbreaks in the past several years, as well as a decrease in the number of animals involved. In the last biennium, 794 outbreaks of hog cholera were reported, which is 126 less than for the preceding period, and the lowest number ever reported for a biennial period. As in the past, the principal causes of primary outbreaks were feeding cholera-infected pork scraps in kitchen refuse, and the movement of sick and exposed hogs.

The following table indicates causes of outbreaks, and the percentage of each:

CAUSES OF HOG CHOLERA
October 1, 1930-September 30, 1932.

| Causes | Number Outbreaks | Per Cent of Total |
|---------------------------|---------------------|----------------------|
| Table scraps | 536 | 67.5 |
| Garbage | 145 | 18.2 |
| New stock | 54 | 6.8 |
| Loose hogs | 29 | 3.7 |
| Unknown | 15 | 1.9 |
| Infected trucks | 4 | 0.5 |
| Dead hogs in streams..... | 4 | 0.5 |
| Double treatment | 4 | 0.5 |
| Virus on person..... | 2 | 0.3 |
| Infected premises | 1 | 0.1 |
| Total | 794 | 100.0 |

The preceding table indicates that more than 85 per cent of the outbreaks are due to feeding kitchen refuse containing cholera-infected pork scraps, and that more than 10 per cent are due to the movement of sick and exposed hogs. It is evident, therefore, that the chief causes of hog cholera are preventable and are largely within the control of swine producers. Spread of infection from primary centers occurred in only about 5 per cent of the outbreaks reported. This is the smallest percentage of secondary outbreaks recorded for a biennium since the work was started. This marked curtailment of the spread of cholera in a community has been due to prompt reporting of sickness of swine by interested co-operators and early diagnosis by veterinarians, together with a better understanding by swine growers of the mode of spread.

It is worthy of note that most of the counties showing a large number of outbreaks are adjacent to cities and have a large non-farm population. Two types of hog raising contribute to the high exposure rate in these localities: Garbage feeding plants, where many hogs are kept on a small acreage, and numerous premises where a few hogs are kept in small lots or pens. In both types the possibility of good sanitary surroundings is less and the probability of infection is greater than in farm herds. There are, of course, exceptions, but data indicate that these two methods of swine management are most prolific in starting primary centers of hog cholera. It is increasingly evident that the sanitary features of the Maryland plan for control of hog cholera are most effective in preventing outbreaks of this disease. Records indicate that when the provisions of this plan are enforced, it is seldom, if ever, necessary to resort to artificial immunization.

Five hundred and seventy-eight outbreaks were of the backyard type—hogs kept in small pens or lots—and 216 were on farms where hogs are bred and raised. However, garbage feeding plants were maintained on 47 of these farms, leaving only 169 farms experiencing losses where some degree of care was exercised. This indicates that less than one-half of 1 per cent of the farms in Maryland where hogs are bred and raised experienced outbreaks of cholera in either 12-month period. Seven hundred and forty of these outbreaks were primary, or new outbreaks. Thirty-nine, or approximately 5 per cent, were secondary, and 15, or about 1.9 per cent were of undetermined origin. A total of 17,001 hogs were involved in outbreaks, of which 3,271, or approximately 19 per cent, were sick, and 2,342, or about 13.7 per cent were dead when the cases were reported. Although these percentages are still too high, they indicate that swine sickness is being more promptly reported than in the past and losses are correspondingly lower.

Measures advocated for control of hog cholera are essentially sanitary in character, and are designed to prevent introduction, harboring,

and spread of the virus of this disease. Inasmuch as the success of this work is dependent upon intelligent understanding of preventive measures, and considerable co-operation in promoting them, the generous assistance of the press has proved invaluable. To inform Maryland swine growers on methods of preventing hog cholera, and to apprise them of current conditions, three articles are written each month, as well as special reports, radio talks, and public addresses on occasion. These written articles are carried by many of the county papers, and frequently by agricultural magazines, farm periodicals, and veterinary journals.

This work is conducted co-operatively by the Live Stock Sanitary Service of the Maryland State Board of Agriculture, the Extension Service of the University of Maryland, and the Bureau of Animal Industry of the United States Department of Agriculture, and the expense is shared about equally by the Federal and State governments. Data collected and carefully compiled in Maryland are apparently causing other States to advocate, in whole or in part, the methods that have here proved efficient and inexpensive in the control of this most destructive disease. Although virtual control is now in sight, and there is reason to believe that this disease can be eradicated eventually, continual vigilance is necessary to prevent heavy and unnecessary losses. Control measures used in most States require persistent use of biological products for immunizing the animals, and frequently the causative factor of cholera is employed in these treatment procedures. Maryland records indicate that prevention measures are, in general, more efficient and involve only a fraction of the expense. Inasmuch as the census reports indicate a considerable shift of population from city to rural regions, special efforts with this group will be necessary to prevent outbreaks in their herds and extensive spread of cholera in the community, as frequently happened prior to control work.

Sanitary Service Laboratory

The work of this laboratory is in charge of Dr. E. M. Pickens, Pathologist and Bacteriologist. It logically falls into three rather well-defined groups; namely, regulatory, diagnosis, and research.

The work consists of field surveys on the infectious diseases of animals and recommendations for handling the unexposed, the exposed, and the diseased animals. In this field also belong the tests required for interstate shipment of various species of animals, as well as the intra-state movement of animals.

Accredited Herd Work for Bang's disease is a major activity. This work was started a little more than a year ago and at present there are over 60 herds under supervision. The work is growing as fast as avail-

able facilities warrant. The first Accredited Herd Certificates have been issued and several more come up for consideration in the near future.

Another outstanding activity is the testing of chickens for pullorum disease (bacillary white diarrhoea). This work is carried on as a co-operative project between the State Poultry Association, the Extension Service, and the Live Stock Sanitary Laboratory. The Poultry Association serves as the accrediting agency and acts upon the recommendations of the other two groups. The Extension Service culls the birds for conformation, production, etc., and assists in procuring the blood samples for testing. The Live Stock Sanitary Service Laboratory procures the blood samples and tests them at the laboratory. Reports, with recommendations, are forwarded to the State Poultry Association for action. During the past year a little more than 25,000 birds were tested. The present season will more than double that number. Owners of birds pay a fee for each test, which partially defrays the cost of the work.

Research—Members of the laboratory staff spend as much time as possible in research work on diseases of animals. Funds for this work are provided by the Biological Laboratory and its Experiment Station affiliation, the State Board of Agriculture for the Live Stock Sanitary Service Laboratory, and the United States Bureau of Animal Industry. Credit for publications is due each of these agencies.

The following subjects have received attention during the last two years:

1. Determination of the best practical method of limiting infection and reducing exposure in infected herds when more drastic means of control are impractical. (Bang's disease.)
2. Study of Bang's disease in a small herd.
3. Study of the methods of transmission of the causative agent of blackhead in turkeys.
4. Study of the specificity of the agglutination test for Bang's disease.
5. Study of the economics of clean and infected herds. (Bang's disease.)
6. A herd survey of reacting animals to determine the relation of the titer of the reaction to udder infection. (Bang's disease.)
7. A study of the effect of pasteurization temperature upon the Bang's disease organism and the agglutinins in milk.
8. A study of the bacterial flora of hams and their relation to odor and flavor.
9. The isolation of *Brucella abortus* from the urine and feces of guinea pigs and cattle.

A list of the more important papers published, or in the hands of publishers, includes the following:

1. The Portals of Entry of *Brucella abortus* in Guinea Pigs, by C. L. Everson, L. J. Poelma, A. L. Brueckner, and E. M. Pickens (Paper read before the American Public Health Association, at Washington, D. C., October, 1932).
2. An Outbreak of Quail Disease in Bob White Quail; Introduction by E. Lee LeCompte and article by E. M. Pickens and H. M. DeVolt (The Maryland Conservationist, 1932).
3. The Effect of Pasteurization Temperatures on (a) *Brucella abortus*; (b) *Brucella abortus agglutinus* in Milk; by M. T. Bartram. (The Cornell Veterinarian, 1932.)
4. The Efficacy of Certain Germicides in the Preparation of Biologic Products; by W. G. Malcolm. (Journal of Bacteriology, 1931.)
5. Pullorum Disease in Chickens; by E. M. Pickens and H. M. DeVolt. (Bulletin of Maryland State Board of Agriculture, 1931.)
6. A Study of *Escherichia coli* in Ice Cream; by J. V. Anzulovic. (Paper read before the American Bacteriological Association, December, 1931.)
7. *Brucella Abortus* in Human Tonsils; by L. J. Poelma and E. M. Pickens. (Paper read before the American Bacteriological Association, December, 1931.)
8. A Cholera-Like Disease in Turkeys; by H. M. DeVolt and C. R. Davis. (Cornell Veterinarian, 1932.)
9. Numbers and Types of Organisms Found in Certain Products Used in Infant Feeding; by H. E. Mattoon. (American Journal of the Diseases of Children, July, 1932.)
10. Uniform Inter-State Regulations for Bang's Disease; by E. M. Pickens; (Proceedings of the Third Annual Eastern States Conference on Bang's Disease, Trenton, N. J., 1932).

Laboratory Examinations—Many of these examinations were made on animals and animal materials and were conducted at the Live Stock Sanitary Service and Biological Laboratories, although a few of them were handled in the Department of Bacteriology.

A list showing the kinds of animals and nature of examinations is given in the report of the Experiment Station and is not repeated here.

Recommendations—In order to strengthen the projects now being carried, and render all reasonable assistance to the people of the State at this time, the following recommendations are made:

The old wing of the Todd Laboratory is in serious need of repair. This should include a brick veneer wall and a new roof, as well as considerable replastering and other inside repair.

A unit for housing about ten cattle and a feed house are badly needed. Additional assistance is needed for care of the experimental cattle, and for poultry disease work.

Princess Anne Academy

Eastern Branch of the University of Maryland

T. J. KIAH, *Principal*.

PROGRESS has been made during the biennium. Total enrollment for 1930-31 was 96, including 51 men and 45 women; for 1931-32, the total was 41, including 27 men and 14 women. Decreased enrollment was due to the exigencies of the times and to discontinuing the second and third years of high school. Although the high school classes show a decrease, the college classes are increasing in enrollment.

The course of study has been revised and is now in strict accord with Federal policies. Two-year college courses are offered in Agriculture and Home Economics. In these courses, two scholarships of \$60 dollars each are available for deserving individuals. Since no work in Agriculture of junior and senior collegiate grade is provided for Negroes in Maryland, the sum of \$600 has been made available by the Board of Regents for scholarships to institutions offering agricultural instruction of this level. These scholarships are designed to cover, at least partially, the differential between the cost at Princess Anne and the cost to out-of-State students at institutions attended.

The agricultural department at Princess Anne has for its head an instructor with a Master's degree and the entire teaching staff is composed of men and women who hold at least Bachelors' degrees, with the exception of instructors in carpentry and auto-mechanics.

Short courses have been held for giving instruction in home-making and farm practices to adults and to the over-age school group. As many as 600 persons have been benefited by this type of program at the Eastern Branch. These courses have created much interest in this and neighboring communities.

The boarding department has been systematized and organized as an integral part of the institution.

The poultry plant was transferred to a new site, looking forward to development in the number and quality of birds. New colony houses were built in accordance with approved plans. The flock of about five-hundred birds has been blood tested. Registered Hampshire hogs have

been purchased for projects in animal husbandry work. A substantial and up-to-date cornerib and granary have been constructed and the barns and other farm buildings have been renovated and painted. A general analysis of the soil has been made and the farm program adjusted accordingly. The greenhouse was partially destroyed by fire: a more suitable site for its rebuilding was selected, a more modern structure was erected, and greater growth in this division is expected.

The loss of a member of the staff is regretted. The Horticulturist, who had charge of that work for the last eleven years, died December 3, 1932.

Some important needs:

1. A science building with modern facilities, including a modern, well-equipped library.

2. Such additional class-room and laboratory equipment as is necessary to make the work in the two-year college courses of standard grade.

3. Since the land on the Princess Anne farm is in a low state of fertility, it is imperative that lime and fertilizers be made available as a means of economy in crop and livestock production.

4. Improvement in the dairy herd and better equipment for the animal husbandry work.

5. Proper laying out of the campus with respect to buildings and roads.

**FINANCIAL STATEMENT FOR
ALL DEPARTMENTS OF THE UNIVERSITY OF MARYLAND
AND THE STATE BOARD OF AGRICULTURE**

Table No.

| | | |
|-----|---|-----------|
| I | Condensed Statement of Receipts and Disbursements for the Year..... | 1930-1931 |
| II | Condensed Statement of Receipts and Disbursements for the Year..... | 1931-1932 |
| III | Condensed Statement of Receipts and Disbursements for the Biennium..... | 1930-1932 |
| IV | Statement of Percentages of Receipts and Disburse- ments for the Biennium..... | 1930-1932 |

NOTE: A more detailed statement as prepared by Miss Maude F. McKenney, Financial Secretary, is available in separate form.

TABLE NO. 1 CONDENSED STATEMENT OF RECEIPTS AND DISBURSEMENTS FOR ALL DEPARTMENTS OF THE UNIVERSITY OF MARYLAND AND THE STATE BOARD OF AGRICULTURE FOR THE YEAR 1930-1931

| | Cash Balance October 1, 1930 | Total Receipts 1930-1931 | Sources of Receipts | | | Total Disbursements 1930-1931 | Cash Balance September 30, 1931 |
|--|------------------------------------|--------------------------------|---------------------|-------------------|---------------------------|-------------------------------------|---------------------------------------|
| | | | State Appro. | Federal Appro. | Student Fees and Misc. | | |
| EDUCATIONAL, RESEARCH AND EXTENSION: | | | | | | | |
| BALTIMORE: | | | | | | | |
| School of Medicine | \$121,730.24 | \$268,795.53 | \$42,500.00 | | \$226,295.53 | \$248,691.02 | \$141,834.75 |
| School of Dentistry | 72,033.44 | 181,759.85 | 5,000.00 | | 176,759.85 | 169,838.74 | 83,954.55 |
| School of Pharmacy | 47,431.46 | 100,111.36 | 10,000.00 | | 90,111.36 | 101,538.38 | 46,004.44 |
| School of Law | 12,949.43 | 32,695.00 | 5,000.00 | | 27,695.00 | 31,446.79 | 14,197.64 |
| Central Office | 3,960.93 | 31,121.85 | 20,000.00 | | 11,121.85 | 34,610.49 | 472.29 |
| University Hospital | 20,318.03 | 369,695.60 | 56,500.00 | | 313,195.60 | 379,981.45 | 10,032.18 |
| Total | \$278,423.53 | \$984,179.19 | \$139,000.00 | | \$845,179.19 | \$966,106.87 | \$296,495.85 |
| COLLEGE PARK: | | | | | | | |
| Administ., Educ. and Plant Maint. | —42,740.47 | \$66,892.10 | \$11,947.44 | \$48,547.07 | 506,397.59 | 865,152.79 | —41,001.168 |
| Earning Departments | 21,214.35* | 119,615.05 | | | 119,615.05 | 111,037.16 | 29,792.24 |
| Outside Organizations | | 46,136.45 | | | 46,136.45 | 46,136.45 | |
| State Working Fund | 225,000.00 | | | | | | 225,000.00 |
| Total | \$203,473.88 | \$1,032,643.60 | \$311,947.44 | \$48,547.07 | \$672,149.09 | \$1,023,326.40 | \$213,791.08 |
| PRINCESS ANNE: | | | | | | | |
| Eastern Branch for Negroes | 10,390.04 | 43,265.58 | 25,120.00 | 10,000.00 | 8,145.58 | 41,787.49 | 11,778.13 |
| Total for Educational Work | \$492,197.45 | \$2,060,988.37 | 476,067.44 | \$58,547.07 | \$1,525,473.86 | \$2,030,220.76 | \$522,065.06 |
| COLLEGE PARK: | | | | | | | |
| Experiment Station Research | 5,718.52 | 293,452.11 | \$1,500.00 | 90,000.00 | 31,952.11 | 295,129.38 | 4,041.25 |
| Agr. and Home Econ. Extension | 51,861.33 | 281,460.14 | 148,787.11 | 110,499.51 | 22,173.52 | 291,198.76 | 42,122.71 |
| Mining Extension | —480.00 | 4,020.00 | 2,100.00 | 1,920.00 | | 4,020.00 | —480.008 |
| Total | \$57,099.85 | \$488,932.25 | \$232,387.11 | \$202,419.51 | \$54,125.63 | \$500,348.14 | \$45,683.96 |
| PUBLIC SERVICE AND REGULATORY: | | | | | | | |
| COLLEGE PARK: | | | | | | | |
| Fertilizer and Feed Inspection | | \$ 33,810.72 | | | 33,810.72 | 33,810.72 | |
| Seed Insp., St. Hort. Dep't, Insect Control, St. Drym's Assn., and Adv. Registry Testing | 1,227.21 | 62,113.43 | 53,900.00 | | 8,213.41 | 61,311.15 | 2,029.47 |
| BALTIMORE: | | | | | | | |
| State Department of Forestry | 486.65 | 69,673.72 | 54,324.00 | 10,745.48 | 4,604.24 | 69,645.27 | 514.50 |
| Maryland Geological Survey | 4,000.00 | 17,277.55 | 16,063.47 | | 1,214.08 | 21,277.55 | |
| Maryland Weather Service | 300.00 | 2,556.14 | 2,556.14 | | | 2,567.64 | |
| Sub-Total | \$6,013.26 | \$185,131.54 | \$126,843.61 | \$10,745.48 | \$47,842.45 | \$188,612.33 | \$2,832.47 |
| STATE BOARD OF AGRICULTURE: | | | | | | | |
| Live Stock Sanitary | 41,761.36 | 195,919.16 | 195,919.16 | | | 209,826.63 | 27,853.89 |
| Executive Expenses | 779.10 | 6,000.00 | 6,000.00 | | | 5,802.63 | 976.47 |
| Total | \$48,553.72 | \$387,350.70 | \$328,762.77 | \$10,745.48 | \$47,842.45 | \$404,241.59 | \$31,662.83 |
| Grand Total—All Departments | \$597,851.02† | \$2,936,371.32 | \$1,037,217.32 | \$271,712.06 | \$1,627,441.94 | \$2,934,810.49 | \$599,411.85‡ |

*Student's Supply Store, University Press and Dairy Manufacturing Laboratory.

†Fees collected for the Athletic Board and Student Organizations.

‡Other income for this department credited to Administrative and Service Sections to cover other costs in connection with the Fertilizer and Feed Work.

§Offset by accounts receivable or by products to be sold.

CONDENSED STATEMENT OF RECEIPTS AND DISBURSEMENTS FOR ALL DEPARTMENTS OF THE UNIVERSITY OF MARYLAND AND THE STATE BOARD OF AGRICULTURE FOR THE YEAR 1931-1932

| | Cash Balance October 1, 1931 | Total Receipts 1931-1932 | Sources of Receipts | | | Total Disbursements 1931-1932 | Cash Balance September 30, 1932 |
|---|------------------------------------|--------------------------------|---------------------|-------------------|---------------------------|-------------------------------------|---------------------------------------|
| | | | State Appro. | Federal Appro. | Student Fees and Misc. | | |
| EDUCATIONAL, RESEARCH AND EXTENSION: | | | | | | | |
| BALTIMORE: | | | | | | | |
| School of Medicine | \$141,834.75 | \$268,816.72 | \$38,426.60 | | \$230,390.12 | \$267,874.75 | \$142,776.72 |
| School of Dentistry | 83,954.55 | 203,613.76 | 10,000.00 | | 193,613.76 | 206,827.74 | 80,742.57 |
| School of Pharmacy | 46,004.44 | 107,083.28 | 15,000.00 | | 92,083.28 | 105,095.55 | 47,998.37 |
| School of Law | 14,197.64 | 71,250.40 | 40,792.50 | | 30,457.90 | 69,743.52 | 15,704.52 |
| Central Office | 472.29 | 73,336.98 | 46,080.32 | | 27,256.66 | 61,437.19 | 12,372.08 |
| University Hospital | 10,032.18 | 309,987.41 | 60,000.00 | | 249,987.41 | 321,019.59 | —1,000.00 |
| Total | \$296,495.85 | \$1,034,096.55 | \$210,299.42 | | \$823,797.13 | \$1,031,998.14 | \$298,594.26 |
| COLLEGE PARK: | | | | | | | |
| Administ., Educ. and Plant Maint. | —41,001.16 | 894,275.92 | 331,779.55 | \$48,453.60 | 514,042.77 | 892,463.34 | —39,188.58 |
| Earning Departments | 29,792.24* | 112,159.34 | | | 112,159.34 | 122,198.00 | 19,753.58 |
| Outside Organizations | | 52,843.54 | | | 52,843.54 | 52,843.54 | |
| Transfer to State Treasurer | † | 16,232.11 | | | 16,232.11 | 16,232.11 | |
| State Working Fund | 225,000.00 | | | | | | 225,000.00 |
| Total | \$213,791.08 | \$1,075,510.91 | \$331,779.55 | \$48,453.60 | \$695,277.76 | \$1,083,736.99 | \$205,565.00 |
| PRINCESS ANNE: | | | | | | | |
| Eastern Branch for Negroes | 11,778.13 | 38,790.37 | 24,734.94 | 10,000.00 | 4,055.43 | 42,783.27 | 7,785.23 |
| Total for Educational Work | \$522,065.06 | \$2,148,397.83 | \$566,813.91 | \$58,453.60 | \$1,523,130.32 | \$2,158,518.40 | \$511,944.49 |
| COLLEGE PARK: | | | | | | | |
| Experiment Station Research | 4,041.25 | 202,542.87 | 86,319.59 | 90,000.00 | 26,223.28 | 207,956.09 | —1,371.97 |
| Agr. and Home Econ. Extension | 42,122.71 | 306,200.35 | 162,482.11 | 121,803.02 | 21,915.22 | 301,338.48 | 46,984.58 |
| Mining Extension | —480.00 | 4,020.00 | 2,100.00 | 1,920.00 | | 4,020.00 | —480.00 |
| Total | \$45,683.96 | \$512,763.22 | \$250,901.70 | \$213,723.02 | \$48,138.50 | \$513,314.57 | \$45,132.61 |
| PUBLIC SERVICE AND REGULATORY: | | | | | | | |
| COLLEGE PARK: | | | | | | | |
| Fertilizer and Feed Inspection | | 34,187.63‡ | | | 34,187.63 | 34,187.63 | |
| Seed Insp., St. Hort. Dep't, Insect Control, St. Dym's Assn., and Adv. Registry Testing | 2,029.47 | 58,695.63 | 51,780.08 | | 6,915.55 | 58,913.03 | 1,812.07 |
| BALTIMORE: | | | | | | | |
| State Department of Forestry | 514.50 | 97,539.88 | 78,382.67 | 14,781.75 | 4,275.46 | 93,563.02 | 4,491.36 |
| Maryland Geological Survey | | 19,031.63 | 18,298.68 | | 733.05 | 17,531.63 | 1,500.00 |
| Maryland Weather Service | 288.50 | 2,840.00 | 2,840.00 | | | 2,903.45 | 225.05 |
| Sub-Total | \$2,832.47 | \$212,294.77 | \$151,301.43 | \$14,781.75 | \$46,211.59 | \$207,098.76 | \$8,028.48 |
| STATE BOARD OF AGRICULTURE: | | | | | | | |
| Live Stock Sanitary | 27,853.89 | 145,240.82 | 145,240.82 | | | 147,663.30 | 25,431.41 |
| Executive Expenses | 976.47 | 4,991.23 | 4,991.23 | | | 5,967.70 | |
| Total | \$31,662.83 | \$362,526.82 | \$301,533.48 | \$14,781.75 | \$46,211.59 | \$360,729.76 | \$33,459.89 |
| Grand Total—All Departments | \$599,411.85† | \$3,023,687.87 | \$1,119,249.99 | \$286,958.37 | \$1,617,480.41 | \$3,032,562.73 | \$590,536.99‡ |

*Student's Supply Store, University Press and Dairy Manufacturers Laboratory.

†Fees collected for the Athletic Board and Student Organizations.

‡Other income for this department credited to Administrative and Service Sections to cover other costs in connection with the Fertilizer and Feed Work.

§Offset by accounts receivable or by products to be sold.

¶Includes student fees collected in September for use in the following year, also funds for payment of outstanding obligations.

TABLE No. III
CONDENSED STATEMENT OF RECEIPTS AND DISBURSEMENTS
FOR ALL DEPARTMENTS OF THE UNIVERSITY OF MARYLAND AND THE STATE BOARD OF AGRICULTURE
FOR THE BIENNium 1930-1932

| | Cash Balance October 1, 1930 | Total Receipts 1930-1932 | Sources of Receipts | | Total Disbursements 1930-1932 | Cash Balance September 30, 1932 |
|--------------------------------------|------------------------------------|--------------------------------|---------------------|-------------------|-------------------------------------|---------------------------------------|
| | | | State Appro. | Federal Appro. | | |
| EDUCATIONAL, RESEARCH AND EXTENSION: | | | | | | |
| BALTIMORE: | | | | | | |
| School of Medicine | \$121,730.24 | \$537,612.25 | \$80,926.60 | | \$516,565.77 | \$142,776.72 |
| School Dentistry | 72,033.44 | 385,375.61 | 15,000.00 | | 370,375.61 | 80,742.57 |
| School of Pharmacy | 47,431.46 | 297,200.64 | 25,000.00 | | 266,633.73 | 47,998.37 |
| School of Law | 12,949.43 | 103,945.40 | 45,792.50 | | 58,152.90 | 15,704.52 |
| Central Office | 3,960.93 | 104,458.83 | 66,080.32 | | 38,378.51 | 96,047.68 |
| University Hospital | 20,318.03 | 679,683.01 | 116,500.00 | | 563,183.01 | 12,372.08 |
| Total | \$278,423.53 | \$2,018,275.74 | \$349,299.42 | | \$1,668,976.32 | \$1,900.00 |
| COLLEGE PARK: | | | | | | |
| Administ., Educ. and Plant Maint. | —42,740.47 | 1,761,168.02 | 643,726.99 | | 1,737,574.39 | \$298,594.26 |
| Earning Departments | 21,214.35* | 231,774.39 | | | 231,774.39 | —39,188.58 |
| Outside Organizations | | 98,979.99 | | | 98,979.99 | 19,752.58 |
| Transfer to State Treasurer | | 16,232.11 | | | 16,232.11 | |
| State Working Fund | 225,000.00 | | | | | 225,000.00 |
| Total | \$203,473.88 | \$2,108,154.51 | \$643,726.99 | | \$2,106,063.39 | \$263,565.00 |
| PRINCESS ANNE: | | | | | | |
| Eastern Branch for Negroes | 10,300.04 | \$2,055.95 | 49,854.94 | | 12,201.01 | 84,570.76 |
| Total for Educational Work | \$492,197.45 | \$4,208,486.20 | \$1,042,881.35 | | \$3,048,604.18 | \$511,944.49 |
| COLLEGE PARK: | | | | | | |
| Experiment Station Research | 5,718.52 | 405,994.98 | 167,819.59 | | 58,175.29 | 413,085.47 |
| Agr. and Home Econ. Extension | 51,861.33 | 587,660.49 | 311,269.22 | | 44,088.74 | 592,537.24 |
| Mining Extension | —480.00 | 8,040.00 | 4,200.00 | | 3,840.00 | —480.00 |
| Total | \$57,099.85 | \$1,001,695.47 | \$483,288.81 | | \$102,264.13 | \$1,013,662.71 |
| PUBLIC SERVICE AND REGULATORY: | | | | | | |
| COLLEGE PARK: | | | | | | |
| Fertilizer and Feed Inspection | | 67,998.35 | | | 67,998.35 | |
| Seed Insp., St. Hort. Dept., Insect | | | | | | |
| Control, St. Dryn's Assn., and | | | | | | |
| Adv. Registry Testing | 1,227.21 | 120,809.04 | 105,680.08 | | 15,128.96 | 1,812.07 |
| BALTIMORE: | | | | | | |
| State Department of Forestry | 486.05 | 167,213.60 | 132,706.67 | | 8,979.70 | 4,491.36 |
| Maryland Geological Survey | 4,000.00 | 56,500.18 | 34,362.15 | | 1,947.03 | 58,500.18 |
| Maryland Weather Service | 300.00 | 5,396.14 | 5,396.14 | | | 1,500.00 |
| Sub-Total | \$6,013.26 | \$397,726.31 | \$278,145.04 | | \$25,527.23 | \$393,711.09 |
| STATE BOARD OF AGRICULTURE: | | | | | | |
| Live Stock Sanitary | 41,761.36 | 341,159.98 | 341,159.98 | | | 88,028.48 |
| Executive Expenses | 779.10 | 10,991.23 | 10,991.23 | | | 25,431.41 |
| Total | \$48,553.72 | \$749,877.52 | \$630,296.25 | | \$25,527.23 | \$764,971.35 |
| Total—All Departments | \$597,851.02† | \$5,960,059.19 | \$2,156,466.41 | | \$3,244,922.35 | \$590,536.99‡ |

*Student's Supply Store, University Press and Dairy Manufacturing Laboratory.

†Fees collected for the Athletic Board and Student Organizations.

‡Other income for this department credited to Administrative and Service Sections to cover other costs in connection with the Fertilizer and Feed Work.

TABLE No. IV

**STATEMENT SHOWING PERCENTAGES OF
RECEIPTS AND DISBURSEMENTS FOR ALL DEPARTMENTS OF THE UNIVERSITY OF MARYLAND AND THE
STATE BOARD OF AGRICULTURE
FOR THE BIENNium 1930-1932**

| | | Per Cent of Receipts |
|--|-----------------------|-------------------------|
| RECEIPTS FOR THE BIENNium 1930-1932: | | |
| From State Appropriations | \$2,156,466.41 | 36% |
| From Federal Appropriations | 558,670.43 | 9% |
| From Student Fees: | | |
| For use of the University | 1,686,430.90 | 28% |
| Collected for the Athletic Board and Student Organizations | 98,979.99 | 2% |
| From Miscellaneous Receipts, including University Hospital | 1,459,511.46 | 25% |
| Total Receipts for the Biennium | \$5,960,059.19 | 100% |
| Balance October 1, 1930 (including fees collected in Sept., 1930, for use in 1930-31) | 597,851.02 | |
| Total Available for the Biennium | \$6,557,910.21 | |
| EXPENDITURES FOR THE BIENNium 1930-1932: | | |
| For Educational Work at College Park | \$2,106,063.39 | 35% |
| For Educational Work at Baltimore, including University Hospital | 1,998,165.01 | 34% |
| For Educational Work at Princess Anne | 84,570.76 | 75% |
| Total for Educational Work | \$4,188,739.16 | |
| For Agricultural Experiment Station Research | | 7% |
| For Agricultural and Home Economics Extension | 413,085.47 | 10% |
| For Mining Extension | 592,537.24 | 25% |
| For Public Service and Regulatory Work: | 8,040.00 | |
| Fertilizer and Feed Inspection, Seed Inspection, State Hort. Dept., Insect Con- trol, State Dairymen's Assn. and Advanced Registry Testing | \$395,711.09 | |
| For State Board of Agriculture, Live Stock Sanitary and Executive Expenses | 369,260.26 | 13% |
| Total Expenditures for the Biennium | 764,971.35 | 100% |
| Balance September 30, 1932 (including fees collected in September, 1932, for use in 1932-1933 and funds for the payment of outstanding obligations) | 590,536.99 | |
| | \$6,557,910.21 | |



UNIVERSITY OF MARYLAND
OFFICIAL PUBLICATION

Vol. 32

March, 1935

No. 3

BIENNIAL REPORT
of the
UNIVERSITY OF MARYLAND
and
STATE BOARD OF AGRICULTURE



UNIVERSITY OF MARYLAND

OFFICIAL PUBLICATION

Vol. 32

March, 1935

No. 3

BIENNIAL REPORT

of the

UNIVERSITY OF MARYLAND

and

STATE BOARD OF AGRICULTURE

Including a summary of the work and needs of the University of Maryland, the Agricultural Experiment Station, the Extension Service, the State Board of Agriculture, and other branches of work under the jurisdiction of the University and State Board of Agriculture.



Issued monthly by the University of Maryland at College Park, Md. Entered as second class matter under Act of Congress of August 24, 1912.

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BOARD OF REGENTS

| | Term Expires |
|--|--------------|
| GEORGE M. SHRIVER, Chairman..... Pikesville, Baltimore County | 1942 |
| JOHN M. DENNIS, Treasurer..... Riderwood, Baltimore County | 1941 |
| W. W. SKINNER, Secretary..... Kensington, Montgomery County | 1936 |
| WILLIAM P. COLE, JR..... Baltimore County | 1940 |
| HENRY HOLZAPFEL, JR..... Hagerstown, Washington County | 1943 |
| J. MILTON PATTERSON..... Cumberland, Garrett County | 1944 |
| JOHN E. RAINE..... Towson, Baltimore County | 1939 |
| CLINTON L. RIGGS..... 903 North Charles St., Baltimore | 1942 |
| MRS. JOHN L. WHITEHURST..... 3902 St. Paul Street, Baltimore | 1938 |

LETTER OF TRANSMITTAL

*His Excellency, Governor Harry W. Nice,
and the General Assembly of Maryland,
Annapolis, Maryland.*

Sir and Gentlemen: The Board of Regents of the University of Maryland and the Maryland State Board of Agriculture herewith render a report of the work of the several departments under their jurisdiction for the last two years.

Very truly yours,

GEORGE M. SHRIVER,

*Chairman, Board of Regents of the University of Maryland and the
State Board of Agriculture.*

December 30th, 1934.

*Hon. George M. Shriver,
Chairman, Board of Regents of the University of Maryland
and of the Maryland State Board of Agriculture.*

Sir: Herewith I am submitting a brief report of the work of the University of Maryland, and the Maryland State Board of Agriculture, including the Agricultural Experiment Station, Extension Service, and the other branches of work under the two Boards, for the last two years. A statement showing the financial operations of the University and the State Board of Agriculture is appended. This includes all funds used for the support of the University.

Very truly,

R. A. PEARSON,

President and Executive Officer.

December 30th, 1934.

The President's Statement

To the Chairman and Members of the Board of Regents:

GENTLEMEN :

The University of Maryland is more largely a self-supporting institution than many citizens of the State are aware. As compared with other similar institutions in other states, this university receives a relatively small part of its income from the general funds of the State. In the report to the Legislature two years ago there was considerable discussion of the ways in which the university benefits the State. It is not necessary to repeat what was said on this subject although interesting additions could be made.

It is proper again to point out that the Board of Regents of the University of Maryland and the State Board of Agriculture have identical membership and the kinds of work conducted under their direction are as follows :

- (1) Resident Instruction in Baltimore, in College Park and (for Negroes) in Princess Anne.
- (2) Research, which is chiefly in the Agricultural Experiment Station at College Park, but is given considerable attention also in other Schools and Colleges in the University, especially in the Professional Schools in Baltimore.
- (3) Extension Service, which relates to agriculture and home economics and is conducted in all parts of the State.
- (4) Public Service and Regulatory Work,—chiefly along agricultural lines.

Attention is invited to the following reports from the various officers. These show the student enrollment, the types and character of instruction given, the financial summaries, and considerable detail on all phases of the work.

The most urgent need at the present time is an increase of funds which will enable the university to strengthen the teaching forces. This means first of all, ability to compete with other institutions that are constantly drawing away well-equipped members of the staff by reason of offers of

higher compensation. It means, also, a larger proportional number of teachers of higher rank. It means particularly better library facilities.

During the present biennium the following buildings have been completed or under construction: Margaret Brent Hall, Ritchie Coliseum, Arts and Science Building, Dormitory for Women, University Hospital.

It is appropriate here to say that great credit is due to the members of the staff for the high quality and large volume of work accomplished. It is well known that this means extra hours of unpaid service and in many cases very heavy loads of teaching service. Acknowledgment of these accomplishments is gratefully made.

There is an increasing demand for instruction in some lines which are not offered by the university and sooner or later these doubtless will be cared for, including Journalism and Music.

Student Life

H. C. BYRD, *Vice-President.*

STUDENT life on the campus, in the fraternities, and in private boarding houses at College Park differs very little from student life on the Pacific Coast or in New England. In the management of any group of approximately two thousand men and women it is to be expected that difficulties and problems will be encountered. At the University of Maryland we have two distinct groups with which to deal,—our students in residence,—some fifteen hundred in number—and about one third as many more who commute daily from Washington and from Montgomery and Prince George's County.

About 20 per cent of the students live in the dormitories, about 16 per cent in fraternity houses, and the remaining 48 per cent in private boarding houses and in their own homes.

The dormitories for men are overcrowded, a condition that should be relieved as soon as possible. A matron is in charge of each dormitory, and her presence has resulted in improvement in the physical conditions of the dormitories and in the personal behavior of those occupying the rooms. For the past two years the women students have been well cared for in Margaret Brent Hall, but there is always a waiting list for any vacancy. Work on another dormitory for women has been started, and it is hoped this additional space will be available for the year beginning September 1935. Although the boarding places near the university where a few of our women students live are under supervision, we shall be much better satisfied when they are under our immediate attention all the time.

The Student Center, which we made over from the old Horticulture Building has not proved to be the center we hoped it would be. It has

served excellently as offices for the Student Government Association and for the student publications but it does not provide sufficient space, or sufficiently attractive space to be a rallying point for students.

In physical training and athletics the University has worked out a sound plan, now in operation, which needs only additional funds to make it entirely comprehensive. About three fourths of the total number of students take part in some form of supervised physical training. This is an unusually large percentage to be so engaged.

The work in physical training is closely allied with the general health program of the campus, and the program involves one of the most comprehensive systems in the country. Under the general head of Health come general physical training, general health work, including medical attention, examinations, and nursing, and the clinical duties of the infirmary; and intercollegiate athletics.

This general work dovetails into the College of Education so that teachers fitted for this type of work, who graduate from that college, may go out to the high schools with a knowledge of the management and coaching of inter-high school sports, of general physical education to reach all students, and also with a knowledge which should enable them to help develop a general health program for both high school and community, particularly such a program as would relate to personal hygiene and health, community sanitation, and recreational welfare.

The handling of financial accounts of student organizations is very satisfactory. Difficulties in this connection have been virtually eliminated. All student funds and accounts are audited by the State Auditing Department. These funds are not, of course, State funds, but by handling them in a business-like way the students get valuable experience in business procedure. The handling of funds in this way also minimizes the possibility of criticism. The student organizations have co-operated splendidly, and more and more each day realize the values derived from this systematic procedure.

Withdrawals of students from the University have hardly run higher than in any other universities of comparable size. Some students withdraw because of lack of finances, others because of poor health and for other varied reasons, but the great cause of student casualties lies either in inability, or failure, to do the quality of work that measures up to the high standards required.

Student activities generally cover a broad range, but are fostered by the University as a part of its educational program, aiming to give various groups opportunities for recreational mental diversions in fields to which they are most adapted. The varied nature of these may be recognized by mentioning the diversity between, for instance, the Opera Club, the Chess Club, the Dramatic Club, the Engineering Society, the Spanish-American Club, the Women's Senior Honor Society, and so on.

Student conduct in general, while not perfect by any means, is satisfactory. At least, the University does not seem to be afflicted in this respect with some of the difficulties that apparently are causing considerable trouble on the campuses of other institutions.

More and more students are applying for aid each year. Through the Federal Emergency Relief Act we have been able to assign 618 students to work paying about \$15 monthly, but this is an emergency measure which may be discontinued at any time.

The greatest need of the University at this time is for scholarships to enable boys and girls who are not now able to get an education to have such advantages. For every scholarship the University now has to offer, there are twenty applicants, ninety per cent of whom are worthy of help.

During this biennium Margaret Brent Hall, a dormitory accommodating 119 women, and the Ritchie Coliseum have been completed and are now in use, a new building for the College of Arts and Sciences is under construction; and the Dairy Laboratory is being remodelled. In Baltimore, the new University Hospital was completed.

In making this brief statement about the student body, it seems appropriate to mention briefly the developments among the alumni group. A full-time secretary is giving the alumni information and aid much more consistently and frequently than was possible in previous years.

A monthly publication "The Alumni News" is reaching all graduates of the College Park branch of the University. The Alumnus Secretary has been active during the current year in forming alumni groups in various localities. This work has met with considerable success and is extending the influence and prestige of the University.

College of Agriculture

DR. H. J. PATTERSON, *Dean*.

THE College of Agriculture comprises eleven departments, some of which have several divisions, viz: (1) Agricultural Economics; (2) Agricultural Engineering; (3) Agronomy—Crops and Soils; (4) Animal and Dairy Husbandry; (5) Animal Pathology, Bacteriology and Veterinary; (6) Botany, Plant Pathology, and Plant Physiology; (7) Farm Forestry; (8) Farm Management; (9) Entomology and Apiculture; (10) Horticulture—Pomology, Olericulture, Floriculture, and Landscape Architecture; and (11) Poultry Husbandry. Each department conducts some research and extension projects in addition to regular class room and laboratory instruction.

The enrollment in the College of Agriculture in 1933 showed a decrease, but that loss was regained in 1934. These changes probably reflect the changes in economic conditions and mental attitudes of people in this area.

The registration since 1928 is shown by the following:

| | 1928 | 1929 | 1930 | 1931 | 1932 | 1933 | 1934 |
|----------------|------|------|------|------|------|------|------|
| Freshman | 48 | 55 | 52 | 68 | 58 | 46 | 61 |
| Total | 141 | 154 | 169 | 183 | 200 | 172 | 184 |

In addition to the students enrolled in the regular agricultural courses, there are a number specializing in agricultural education and enrolled in the College of Education. There are also a number taking special courses.

The number of students enrolled for graduate work in agricultural subjects has increased during the past two years. About twenty per cent of the teaching load of the professors in the College of Agriculture is devoted to graduate courses.

Federal and State emergency projects have made an increase in the demand for some special and extension courses. The reduction in State appropriations has necessitated a reduction of the salaries of professors and the maintenance budgets. These combined circumstances have caused a revision of the programs and thrown extra work on some departments which has been met by some men giving more time and taking on new duties. It is not to the best interest of the University and all concerned to continue this doubling up policy for a very long time.

Economic conditions have not permitted the purchase of as much new equipment as is desirable, but yet some helpful and valuable additions have been made during the biennium.

The plan adopted two years ago of allowing students greater latitude in elective courses to provide the group of subjects best suited to their needs, has proved satisfactory and suggests that with proper guidance, the privilege might be extended. More students should be availing themselves of the opportunities which this system of electives offers for training for particular positions or pursuits with profit to themselves and persons or organizations seeking help.

Plans have been matured for the inauguration of a series of six-weeks courses in agriculture, home economics, and rural life to begin January 7, 1935. These courses will provide the opportunity to get some thorough and practical training in a concentrated and intensive way at the time of year when home duties are usually not so pressing. They are designed especially for the boys and girls between 18 and 25 years of age who have completed high school, but they will also be open to students who have had only the advantage of the grade schools. There will be no upper age limit.

During the past two years some students of the College of Agriculture have taken part in the student judging contests at the fol-

lowing: Eastern States Exposition, Springfield, Massachusetts; The International Dairy Congress, Waterloo, Iowa; and the International Live Stock Show, Chicago, Illinois. The judging teams have made very good records. They have proven a credit to the University, their instructors, and themselves. These contests give training of inestimable value.

Students of the College of Agriculture maintain a Student Grange, a Horticultural Club, a Live Stock Club, a Dairy Manufacturing Club, an Entomology Club, a Bacteriology Club, and an honor fraternity, Alpha Zeta. There is also an Agricultural College Council, composed of representatives of these different organizations, to handle problems of mutual interest. Membership and work in these is voluntary, and no college credits are given for work done in them. Much of the training obtained in these clubs is very valuable and students are encouraged to join and take part in these activities.

The Student Grange represents the great national farmers' fraternity of the Order of Patrons of Husbandry, and in their work they emphasize "Training for Rural Leadership." They sponsor much deputation work in local granges throughout the State. The Horticultural Club sponsors the horticultural show in the fall, and the Live Stock Club sponsors the fitting and showing contest in the spring. Both of these exhibitions are very creditable and worthwhile University functions. They give valuable training and inspiration to the students.

Membership in Alpha Zeta Fraternity is chosen from the students in the College of Agriculture after an earnest agricultural motive and executive ability have been demonstrated. This national organization fosters good scholarship, and to that end awards a gold medal to the member of the Freshman class in agriculture who makes the highest record during the year.

Agricultural Experiment Station

DR. H. J. PATTERSON, *Director.* •

THE program, progress and results of the Experiment Station work during the past two years, together with the financial statements, have been given in detail in the Forty-sixth and Forty-seventh Annual Reports, which are available in print.

The results of the research projects have contributed much to increase the returns from farm products, but they have also been of inestimable value to nearly every citizen of the State in that they have contributed towards better standards of living and making available, within the reach of all, more nutritious and healthful foods.

During this biennium the Station has issued two annual reports, 28 bulletins covering a total of 880 pages, and contributions of 97 papers have been made to scientific journals and the proceedings of scientific societies. Abstracts of the bulletins are appended herewith.

Need for Research

Economic and emergency programs have developed a great need for research. The demand for exact knowledge of soils, plants, and animals is impelling. A true and worthwhile, long-time economic program or plan for agriculture must be based upon the work of the Experiment Station. Maryland is now profiting from the well-organized and long-continued research projects. Some of the important bulletins now being published represent years of patient and painstaking effort of the workers.

The Station staff has frequently been called upon during the past two years for advice and to direct and conduct surveys for the Federal Government in connection with their emergency programs.

Facilities Required

To meet all the demands the Station should enlarge its staff, equipment and other facilities. The need of land, greenhouses, laboratories, and some equipment is pressing in all departments, but particularly great for the proper conduct of the departments of Agronomy, Animal and Dairy Husbandry, and Poultry Husbandry. These needs have been set forth in detail in the annual reports of the Station.

Seed Inspection

In the inspection work during the past two years much attention has been given to determining the value of the seed or their economic use upon their potential plant producing capacity.

A study of 566 samples of red clover seed sold in Maryland during the six-year period 1928-1933 shows, for example, that in order to secure a good stand of plants some grades could be used at the rate of six pounds per acre while others for the same number of plants per acre would require forty-five pounds per acre. It is apparent that a blanket rate of seeding could not be followed. In some cases the usual quantity used would be wasteful, while in others the usual quantity would not produce a stand and would prove expensive and disappointing in results. The clover seed examined during the six years referred to showed that one-fourth of the lots could not be used at the usual rate of seeding without material losses due either to using not enough or too much.

Much attention should be given to the place of origin of seed, as this is an important factor in securing vigorous plants and a good crop. Seed should be free from noxious weed seeds and not carry a high percentage of common weed seeds. A bulk of seed which carries twenty

per cent of weed seeds is twenty-five per cent more costly than a similar quantity which carries no weed seeds.

Objectives in Seed Testing

The primary role of seed testing should be to furnish the user of seeds with information regarding the character of the seed, its impurities and its usefulness for the production of plants or a crop.

Quantity Inspected

Farmers are appreciating the value of good seed more and more, as is evidenced by the increase in the number of samples submitted for examination and the character and amount of information they ask concerning seed. The number of samples examined by the Seed Laboratory is shown by the following:

| | | | |
|-----------|--------------|-----------|--------------|
| 1928..... | 902 samples | 1932..... | 1870 samples |
| 1929..... | 1408 samples | 1933..... | 2564 samples |
| 1930..... | 1925 samples | 1934..... | 4200 samples |
| 1931..... | 2140 samples | | |

Biological Laboratory

This laboratory operates under a special Act and is a division of the Experiment Station, Department of Animal Pathology and Bacteriology. This laboratory cooperates closely with the Live Stock Sanitary Division of the State Board of Agriculture. It prepares and distributes biologics for use in connection with animal diseases and legume inoculation.

Biologics Distributed

As an aid to diagnosis and for experimental use in treatment of affected animals and protection of well animals, certain biological products are prepared and distributed. Legume inoculum is also prepared and distributed. The amounts distributed are shown by the following:

| | 1933 | 1934 |
|---|--------------|--------------|
| Tuberculin—Bovine (Intradermal) | 23,722 cc | 19,205 cc |
| Tuberculin—Avian (Intradermal) | 72 cc | 765 cc |
| Mastitis Bacterin—Bovine | 31,035 cc | 39,600 cc |
| Mastitis Bacterin—Caprine ..... | ..... | 375 cc |
| Periodic Ophthalmia Bacterin—Equine.... | ..... | 6,625 cc |
| Diplococci Bacterin—Equine ..... | ..... | 125 cc |
| Bacterin—Canine | 150 cc | ..... |
| Fowl Pox Vaccine (Follicular)..... | 10,975 doses | 10,100 doses |
| Fowl Pox Vaccine (Subcutaneous)..... | 6,085 doses | 3,400 doses |
| Fowl Pox Vaccine (Stick)..... | 3,400 doses | 1,600 doses |
| Roup Bacterin—Fowl | 850 doses | ..... |
| Legume Inoculum (for bushels of seed).... | 2,794 | 2,258 |

Abstract of Bulletins

Bulletin 337—Organization and Management of Maryland Farms—Piedmont Plateau Region, by S. H. DeVault and Ray Hurley. 58 pages. A three-year survey of organization and management of farms in Maryland with recommendations as to their improvement.

Bulletin 338—Economic Efficiency of the Farm Layout in Maryland, by A. B. Hamilton and S. H. DeVault. 48 pages. A discussion of the relative efficiency of different farm layouts from the standpoint of conveyance used in getting from the house to the different parts of the farm; the economic loss in having small, odd-shaped fields; and the efficiency in the use of labor and machinery on large and small farms as well as on fields of different size and shape.

Bulletin 339—Taxation in Maryland with Special Reference to Agriculture, by W. P. Walker and S. H. DeVault. 82 pages. A discussion of the present methods of taxation and sources of revenue, trend in public expenditures, assessment methods and procedure, inequalities in assessment, new sources of revenue and needed reforms in the taxation system.

Bulletin 340—Salt Tolerance of Baby Chicks, by George D. Quigley and Roy H. Waite. 27 pages. This gives the effects of large and small portions of salt in the diet of baby chicks.

Bulletin 341—Housing Conditions in Relation to Farm Labor Turn-over, by Margaret Coffin. 41 pages. A study of 1,090 farm houses in Maryland, illustrating that more favorable living conditions tend to make more permanent tenants.

Bulletin 342—Fish Meal Versus Cottonseed Meal as a Feed for Dairy Cows, by L. W. Ingham. 10 pages. Satisfactory results obtained from feeding of fish meal to dairy cows. Cost of two meals would be deciding factor in choosing between them.

Bulletin 343—Maryland Seed Laws and Regulations, by F. S. Holmes. 11 pages. A list of all seed laws including the Agricultural Seed Law, the enforcement of which is in charge of the Agricultural Experiment Station.

Bulletin 344—Some Effects of Freezing on the Physical and Nutritional Properties of Milk, by R. C. Munkwitz, M. H. Berry and W. C. Boyer. 12 pages. Study showing the nutritive value of milk is not impaired by freezing.

Bulletin 345—Part I, The Mosaic Disease of Tomatoes, by J. W. Heuberger and J. B. S. Norton; Part II, The Fusarium Wilt of Tomatoes, by J. B. S. Norton; Part III, The Control of Tomato Diseases, by J. B. S. Norton and H. A. Hunter. 48 pages. Part I—A full discussion of mosaic disease and its control. Part II—Developments towards a fusarium resistant tomato plant. Part III—Brief discussion of noteworthy tomato diseases.

Bulletin 346—The Sources of the Food Used by Maryland Farmers, by Margaret Coffin. 21 pages. List of food practices and factors causing changes in food habits.

Bulletin 347—Oat Variety Tests, by J. E. Metzger. 8 pages. Results of tests of several varieties with recommendations regarding the varieties most suitable for use in different sections of the State are given, together with a discussion of management of the crop. The use of barley as a substitute crop under some conditions is recommended.

Bulletin 348—Corn Earworm Studies, by L. P. Ditman and E. N. Cory. 19 pages. Experiments with corn earworm and recommendations for control.

Bulletin 349—An Industrial Alcohol By-Product Stock Food, by L. B. Broughton, Paul W. Frey and B. E. Carmichael. 16 pages. Nutritive experiments with rats and hogs, using the by-product from manufacture of alcohol as a substitute for protein foods.

Bulletin 350—Studies Relative to the Hydrolysis of the Fat of Home-Cured Hams, by W. C. Supplee and L. B. Broughton. 9 pages. Changes undergone during storage, and a study of fatty acids.

Bulletin 351—The Soils of Maryland—Productivity Classification, by O. C. Bruce and J. E. Metzger. 28 pages. Classification of all of the soil series and types for each county of the State.

Bulletin 352—Farm Tenancy and Leasing Systems in Maryland, by W. P. Walker and S. H. DeVault. 50 pages. Distribution, types, and historical aspects of farm tenancy in Maryland. Types of leasing contracts and suggested modification of present leasing agreements are given.

Bulletin 353—A Study of the Factors Influencing Red Color on Apples, by L. A. Fletcher. 41 pages. Effect of various chemicals, nitrogenous and non-nitrogenous fertilizers, irrigation and thinning on the color of various varieties of apples.

Bulletin 354—Use of Skimmilk Powder, Blood Flour, and Fish Meal in Grain Rations for Calves, by M. H. Berry. 23 pages. Results of the use of powdered skimmilk, dried blood flour and fish meal as component parts of home-mixed grain rations for raising dairy calves.

Bulletin 355—An Economic Study of 147 Turkey Flocks in Maryland, by S. H. DeVault and Mary Ingersoll. 31 pages. Production practices, income, cost, and profits of the business and an analysis of data to determine the factors affecting profits are discussed.

Bulletin 356—A Farm Management Study of 70 Dairy Farms in Montgomery County, Maryland, by Donald E. Watkins. 46 pages. A discussion of the relative importance of some of the factors upon which profitable dairy farming depends.

Bulletin 357—Part-Time and Small-Scale Farming in Maryland, by W. P. Walker and S. H. DeVault. 30 pages. A discussion of the possibilities of supplying family with adequate standards of living by full-time farming on small acreages; the extent to which income can be supplemented by farming on small scale; the combination of farm enterprises on a small size farm which will supply without the outlay of much capital and current cash the major food, fuel and shelter requirements of the family.

Bulletin 358—Fertilizer Tests with Tobacco, with Special Reference to Effects of Different Rates and Sources of Nitrogen and Potash, by J. E. McMurtrey, Jr., W. M. Lunn, and D. E. Brown. 35 pages. Field tests of rates and sources of nitrogen and potash.

Bulletin 359—Feed Consumption Studies Based on the Six Maryland Egg Laying Contests, by Roy H. Waite. 39 pages. Feed consumption of various breeds and special studies of White Leghorn, Rhode Island Reds, and barred Plymouth Rocks as a result of the contest held for six years from 1925 to 1931.

Bulletin 360—Biscuit-Making Qualities of Flours from Maryland Wheats, by W. B. Kemp, G. E. Eppley, and Claribel Welsh. 14 pages. Comparison of Maryland flours with commercial flours to determine their value for cake and biscuit making.

Bulletin 361—Potato Seed Maintenance Studies in Maryland, by R. A. Jehle and J. W. Heuberger. Spraying Early and Late Potatoes on the Eastern Shore of Maryland, by R. A. Jehle, E. N. Cory, and R. T. Grant. 19 pages. Some suggested plans for developing and maintain-

ing a reliable high yielding source of potato seed stock practically free from diseases and mixtures for certified seed potato growers. Suggested sprays for potatoes for preventing blight and various insects.

Bulletin 362—Crop and Soil Management Practices, by Agronomy Staff. 36 pages. A number of short, non-technical reports on investigations that have a direct bearing on various phases of farm practices in Maryland.

Bulletin 363—Value of Natural Weed Fallow in the Cropping System for Tobacco, by D. E. Brown and J. E. McMurtrey, Jr. 10 pages. Discussion of one and two year weed fallow systems of rotation in comparison with the value of various legume cover crops on the growing of tobacco.

Bulletin 364—The Oriental Fruit Moth in Maryland, by H. S. McConnell. 45 pages. History, description, habits, and seasonal development of the oriental fruit moth with suggested control measures.

The College of Arts and Sciences

DR. T. H. TALIAFERRO, *Dean.*

THE growth of the student body of the College of Arts and Sciences during the past decade is well worthy of remark, the enrollment being 271 in 1923-24 and 869 in 1933-34. This increase of more than 200 per cent in enrollment illustrates not only the popularity of the courses given but the great part the College is playing in the activities of the University, and the further fact that practically all of the fundamental courses in the other Colleges are taught by members of its Faculty indicates most clearly how closely the value of the Institution to the State is intertwined with the physical well being of the College of Arts and Sciences and with the strength and character of its Faculty. The close connection between the well being of the University as a whole and the College of Arts and Sciences is further accentuated by the fact that a large proportion of the students in the Graduate School is working for advanced degrees under the guidance of members of the Staff of the College of Arts and Sciences.

The enrollment for the year 1934-35 is practically the same as for 1933-34, that is about one-half of the undergraduate enrollment. There has been, however, a decrease in the Freshman enrollment. This is probably due to several causes, one being that the pinch of this era of depression has just begun to be felt in many families. On the other hand the upper classes are larger and this fact constitutes a real problem.

When the increase in the incoming classes made it necessary to provide more instructors capable of teaching the fundamental subjects common to all collegiate institutions, the problem was comparatively

simple, even with the limited funds available. Now, however, the classes for the more advanced students are overcrowded and the funds available make the problem of increasing the Staff more difficult since for these courses instructors highly trained in specialties are demanded. The College has always been undermanned, particularly as regards this high type of instructor. The present Staff in accomplishing all that is possible under the circumstances but there is grave danger that unless funds are provided to obtain a larger number of highly educated, mature men and women, the University will lose not only students of marked scholastic ability but its prestige in the academic world.

In spite of the fact that the increase in enrollment has been marked for a number of years very few instructors have been added to the staff, except in the lower ranks. There is now a definite demand in most of the departments for a greater number of well trained and experienced instructors if the Institution is to improve or even to retain its standards, to enhance its prestige and standing among institutions of the same grade, and to emphasize to students,—in residence and prospective,—that it provides a sound and broad education. The reason assigned for the non-employment of such additional instructors has been "lack of funds" and this seems to be a valid reason at this time but, with the present size of the student body and its possible further growth, it is imperative that plans be made to provide the funds necessary.

The demand for the evening graduate courses in Chemistry offered in Baltimore and in College Park still exists. In Baltimore these courses are given primarily for the benefit of chemists engaged in the industries, while in College Park the needs of those employed in the U. S. Department of Agriculture are first considered.

In the School of Dentistry and the School of Pharmacy the quality of the work done in Arts and Sciences improves with the years, a fact which reflects much credit on the instructors detailed from the Departments of the College of Arts and Sciences for this duty.

The report for "Feed, Fertilizer and Lime Inspection Service" will be found in a separate section. Attention, however, is called to the fact that members of the Staff of the College of Arts and Sciences engaged in this work have been efficient and have shown, as would be expected, a fine attitude towards cooperative effort.

A true sense of duty and an excellent spirit of cooperation have been shown at all times by each and every member of the College Staff. The effect of the reduction in salaries is keenly felt in many directions, among which may be noted the continued existence of obligations undertaken in more prosperous times and the persistent advance in the cost of living. The resulting effect upon morale is patent to every thoughtful person. Therefore, it is respectfully urged that definite effort be made looking towards the restoration of the cut in salaries and the establishment of a retirement plan which will

afford the Faculty and Staff a greater feeling of security as to the future.

In this report, as in the past, attention is called to the utter inadequacy of accommodations for the proper functioning of the College. This year, however, a ray of sunshine pierces through the gloom as the construction of the new building for Arts and Sciences has begun. The members of the Faculty look forward with keen anticipation towards the completion of this building which will afford proper housing for so many of them and their activities. The partial evacuation of Morrill Hall and the old Library, which will follow the occupation of the new building, will provide, it is devoutly hoped, room for the development of laboratories for the fast growing Department of Zoology and for the housing of the Department of Music, which, so to speak, has practically no place to lay its head.

The amount of equipment increases slowly with the passing of the years. There is, however, still a demand for it as the student body grows, the quality of laboratory work improves, and the mortality usual to apparatus continues. The funds for the purchase of apparatus and materials have been far too small at all times and these have been further depleted during the depression by cuts which have been deemed necessary. At the present time the need for more funds for this purpose is emphasized by the advancing prices for materials and apparatus. Under these conditions it is highly desirable that means be sought to meet the needs here outlined.

The establishment of a Department of Music, of Art and of Geology is most desirable as is the further development of the work in Classics, Philosophy, History, Political Science, Economics and Sociology. There may be a question as to the advisability of opening new Departments before developing fully the Departments already established, but there is no doubt as to the necessity for both if the University is to fulfill the desires of its patrons.

In the Library the number of volumes increases each year, but at a variable rate. The general need in every department for books and more books is apparent at all times, but at the present time the demand for periodicals—particularly those relating to the Social Sciences—is even greater than it is for books since this is an era of rapid and marked changes in governmental policy and in social consciousness throughout the world.

The depression seems to have had but little, if any, deterrent effect on the spirit of scholarship and of research which has always existed among the members of the College Staff. As a result of their efforts many bulletins, literary and scientific articles in magazines, and book reviews have appeared during the biennium. "College Rhetoric", by Homer C. House and Susan Emolyn Harmon, and "Buffon et l'Aggrandissement du Jardin du Roi", by William F. Falls have been released from the press, and at the present time there are several other volumes ready for or on the press.

Although most of the changes regarding personnel have been of a minor character, it is worthy of remark that the duties of Professor Thomas Humphreys Spence have been reduced because of his physical condition. Professor Spence has given this institution faithful and valuable service for forty-two years. He should have been retired, but this was impossible as no retirement fund exists. The teaching of courses, formerly undertaken by him and from which he is now excused, has been assigned to other members of the Faculty.

The support and encouragement afforded by the Executive and the Board of Regents to each and every member of the College Faculty and Staff have been deeply appreciated. To this expression of their thanks is added the assurance of their continued cooperation in all matters connected with the advancement of the best interests of the University.

College of Education

DR. W. S. SMALL, *Dean.*

THIS report reviews briefly the salient features of the last report and indicates progress made in the biennium just closed.

The functions of the College of Education are to prepare high school teachers, vocational teachers, high school principals and supervisory and administrative officers; to supplement the work of the normal schools by providing a curriculum leading to a degree for graduates of the two-year and three-year normal schools and by providing post normal work in preparation for positions as elementary school principals, special teachers, helping teachers and supervisors; and to conduct graduate work in the field of Education. Many of the courses are open to students in the other colleges. The Summer School is administered by the Dean of the College of Education and is, in fact, an administrative division of that College.

Enrollment

The increase in enrollment pointed out in former reports shows no abatement, as is apparent from the following figures:

| Enrollment | 1929-30 | 1931-32 | 1932-33 | 1933-34 | Dec. 1, 1934 |
|------------------------|---------|---------|---------|---------|--------------|
| Students in regular | | | | | |
| session | 137 | 182 | 227 | 230 | 264 |
| Students in Industrial | | | | | |
| Courses (Baltimore). | 175 | 177 | 193 | 190 | 212 |
| Students in Summer | | | | | |
| Session | 745 | 1,033 | 840 | 1,016 | ... |

In addition to the 264 students registered in the College of Education, 87 students registered in the Colleges of Agriculture, Arts and Sciences, and Home Economics are pursuing curriculums in the College of Education. There are actually 351 students under the supervision of the College of Education, or 48 more than in 1932. Of these 66 are seniors.

Services Rendered

Since the establishment of the College of Education in 1918, approximately 500 students have been graduated. Of this number about 300 have been employed one or more years in the Maryland Schools. In the present year, about 155 are so employed. Many of our graduates are teaching in other states; some have continued their studies in graduate schools and have found their way into college positions or scientific work; others have migrated from teaching into other lines of work; marriage accounts for disappearance from teaching of many of the women graduates. Reports from sixty per cent of the class of 1934 show that about twenty-five per cent of this class are employed as regular teachers in Maryland. Several are teaching F. E. R. A. Adult Classes; others are engaged in social work. Only two reported no employment.

The College has met the increasing demand for graduate work. Since 1924 the Master's Degree has been conferred upon 49 graduate students—two-thirds of this number within the past five years. Thirty-three of these are now employed in the Maryland Public Schools: 2 as county superintendents, 19 as principals and 12 as teachers.

The Department of Agricultural Education and Rural Life continues its service of preparing teachers of Vocational Agriculture and of preparing for other forms of rural leadership. Of the 36 teachers of Vocational Agriculture in the high schools of the State, 34 were prepared in this Department. Nine of the present county agents were trained as teachers of Vocational Agriculture and served in that capacity two or more years each. The enrollment in Vocational Agriculture, which was somewhat excessive in the last biennium, is tending to adjust itself to the needs of the State. At the present time the demand for agricultural teachers is again increasing. The load of graduate instruction carried by the department shows some increase over the preceding biennium. The Professor of Agricultural Education has served as adviser to the President in the administration of the work at Princess Anne Academy.

The Department of Home Economics Education continues its efficient work of preparing teachers in this field. The enrollment has increased. Most of the graduates have found employment, the majority as teachers. The demand in 1933 was discouraging, but 1934 shows a marked improvement. Of the 16 graduates, 9 are now employed in the counties of Maryland. Two are engaged in Nursery

School work. The graduate courses offered by the Department in the Summer Session have met with a gratifying response. The work of this Department has been greatly aided by the establishment under a F. E. R. A. grant, of the Nursery School which has served as an observation and practice center for all of the students in the department and as a laboratory for study of child nutrition and child psychology.

The Departments of Physical Education for Men and Women, the establishment of which was noted in the last Biennial Report, are making satisfactory progress in the teacher training programs. In 1933 and 1934 ten women and two men were graduated.

The Department of Psychology continues to perform the duty of conducting and interpreting the freshman college ability examinations, in addition to carrying a heavy teaching load.

The Department of Industrial Education is performing an increasingly important and exacting service. It administers the program of in-service courses for teachers in the vocational field in Baltimore; directs the summer program in Industrial Education; and assists in planning and directing the industrial curriculum at College Park.

Vocational Program in Baltimore. A systematic program is carried on in Baltimore for teachers of industrial education and other vocational branches. It is designed to meet the needs of the following groups: Candidates for teaching positions; beginning teachers; teachers in service who have not completed certification requirements; teachers in service who are meeting the requirements for a degree; night school teachers. A majority of those enrolled in these courses are teachers of industrial subjects, supplemented by teachers of the related subjects in vocational and pre-vocational schools and by teachers of commercial subjects and teachers of home economics.

The diverse needs of the continuously increasing body of earnest students is met by program of courses that includes professional courses in Education, Shop-work, Drawing, English, American History, Government, Social Science, Mathematics and Science.

During the biennium the degree of Bachelor of Science in Industrial Education has been conferred upon 26 graduates of the Industrial Education curriculum. Of this group six are now employed as principals of schools, ten as heads of departments, and ten as teachers.

These courses, in the past biennium, were conducted in Baltimore in the late afternoon and at night in five of the public school buildings and in two of the University buildings. The help and interest of the City Department of Education, the Dean of the Medical School, and the Secretary of the Baltimore Schools of the University of Maryland have made it possible to operate this program effectively.

The present indications all point to an expansion of the program of Industrial Education. This expansion means more schools, more principals, and more heads of departments. The preparation of persons for these positions of leadership must be provided by the College of Education. With this responsibility impending, the question of estab-

lishing graduate work in vocational education, and especially in Industrial Education, becomes of material importance.

The Summer Session renders a varied and important service to all classes of teachers and educational workers: to elementary school teachers for renewal or raising of certification, and to elementary school teachers working for a degree; to high school teachers for renewal of certification and also to high school teachers and principals working for the Master's Degree; to special teachers, attendance officers, principals and supervisory officers. The extent and variety of this service is partly indicated by the attendance at the Summer Session of 1934 of 775 students from Maryland, a large majority of whom were public school teachers. Of the 204 graduate students enrolled, seventy-five per cent were studying Education as a major or minor subject.

The pressure of teaching duties on the part of the faculty prevents preparation of studies for publication. One member, Dr. Brechbill, has published one paper and has another in press: "The Value to Science Teachers of a Course in the Teaching of Science" in *Mathematics Teacher*, October, 1934; "Status of College and University Teaching Offerings in Teaching of Sciences" in *Science and Education*, January, 1935.

Additions and Improvements

It is gratifying to note the following additions and improvements during the biennium, which are contributing materially to the extent and efficiency of the work of the College.

In the last report reference was made to the establishment of four-year resident curriculums in Industrial Education and Commercial Education at College Park. Students are beginning to enroll in these curriculums. The numbers will not be large as both the conditions of admission and the curriculums are exacting.

Two members of the faculty have been transferred from half-time to full-time service, an addition which has enabled the College to take care of the increased enrollment, to relieve the over-load of other instructors, to give better graduate instruction and to begin some much-needed research work.

A wholesome increase is shown in the relative number of students preparing to teach mathematics and science.

In the last biennial report it was shown that one of the most urgent problems confronting the College of Education is the limitation and selection of students. "This will involve some restriction on academic grounds of those seeking admission as freshmen; careful and thorough study of the individual students during the freshman and sophomore years; and diversion to other fields at the end of the sophomore year of those who, by reason of scholarship and personality, are obviously unfit to become teachers." Distinct progress has been made towards solving this problem and in developing standards for the selection and training of prospective teachers.

Practice teaching facilities have been expanded. Heretofore all of the practice teaching has been done in the Hyattsville High School. Cooperative arrangements have been made with the school authorities of Montgomery County and of the District of Columbia whereby practice teaching may be done in those school systems. Practice teaching was done in 1933-34 in more than fifteen different schools. This relieves the congestion in the one school and provides variety in school conditions and in personality of critic teachers. On the other hand, it is wasteful of the time of the members of the staff who supervise student teaching.

Curriculum requirements leading to a degree in elementary education have been set up. Graduates of two-year and three-year normal curriculums are admitted to candidacy for this degree. About 50 have already matriculated.

A beginning has been made of Evening Classes for Teachers at College Park. In the present semester four courses are given with an aggregate enrollment of 58. Students in these classes come from the nearby counties and from Washington.

Also a beginning has been made of off-campus courses for teachers. One such course was given in Talbot County in 1933-34. Two classes have been formed this year—in Calvert County and Prince George's County. Requests are pending for courses in two other counties.

Arrangements have been made with the Frostburg Teachers College whereby certain courses for teachers in service, conducted at that institution on Saturdays, are credited towards a degree.

The establishment of a Nursery School through F. E. R. A. aid is one of the outstanding improvements. This was begun in the second half of last year, was continued during the Summer Session, and is now in its second year. This school, as a part of the Federal Emergency Relief Program, limits admission to children of needy families. The school has been visited by numerous groups of adults and the principles and practices of the Nursery School have been studied. As a result, requests have come from more than 20 families, willing to pay a fee for the privilege of sending their children. Provision should be made for a permanent Nursery School, as a part of the University program, after the Relief funds are withdrawn.

Summary of Present Conditions and Problems

As now organized, the College of Education is equipped to prepare high school teachers of Vocational Agriculture, Vocational Home Economics, Physical Education for Men and Women, and of all academic subjects, except Latin. It is partly equipped to prepare teachers of Industrial Arts and Shop Work, Commercial subjects, and High School Music. It is dependent upon the generosity of the College of Engineering for space for Shop Work and Drawing and for tools, machinery and other equipment. This condition cannot continue indefinitely. The College of Engineering, as its numbers increase, will need the full use of its facilities.

In the field of Music Education, the Summer Session program has been strengthened. It is now possible for a student, by combining summer work in High School Music with work of the regular session, nearly to satisfy the requirements for State certification in High School Music. A good music department in the University is an urgent need.

As noted above, the staff additions permit more attention to graduate work, but the demand still tends to exceed the supply. We are refusing to accept candidates for the doctor's degree. It will be difficult to maintain this position as the number of applicants increases from year to year.

A small fund for publications would fill a long-felt want. A number of the theses produced by graduate students are worthy of publication. One example is Mr. Worthington's thesis, "Forces Leading to the Establishment of the Maryland Agricultural College." Also members of the faculty have worked out aids to teaching that should be made available to the teachers of the State.

The need for a man in Educational Research and Personnel work is urgent. This need is accentuated by the pressing problems relating to the admission of students to the University and adjustment thereafter.

The restoration, especially in the lower salary classes, of salary deductions effective in the present biennium, is an urgent need. The hardships entailed by these deductions have been borne uncomplainingly without diminution of zeal and effectiveness. It is hoped that at least a partial restoration may be made.

The need for a University high school, which has been set forth in the five preceding biennial reports becomes each year more insistent in order to economize time of instructors and students and to insure uniformly good conditions for student teaching.

The Summer School

DR. W. S. SMALL, *Director.*

THE program of instruction in the Summer School is planned primarily to meet the needs of teachers in service and of students desiring to satisfy the requirements for undergraduate and graduate degrees. The functions and activities of the Summer Session necessarily have been considered in connection with the report upon the College of Education. This report, therefore, is limited to brief consideration of the enrollment and distribution of students and of the improvement and progress in the last two years.

The following tabulation shows the enrollment and distribution of students for the past five years:

| | 1930 | 1931 | 1932 | 1933 | 1934 |
|---|------|------|-------|------|-------|
| Men. | 257 | 338 | 406 | 389 | 408 |
| Women. | 488 | 589 | 627 | 451 | 608 |
| Total. | 745 | 927 | 1,033 | 840 | 1,016 |
| Group distributions: | | | | | |
| Undergraduates. | 126 | 169 | 217 | 191 | 237 |
| Graduate students | 157 | 200 | 204 | 191 | 204 |
| Elementary School Teachers. | 363 | 447 | 469 | 333 | 408 |
| High School Teachers. | 181 | 152 | 167 | 147 | 151 |
| Junior High School Teachers. | ... | 19 | 21 | 38 | 34 |
| High School Principals. | ... | 33 | 26 | 13 | 24 |
| Attendance Officers and Super- visors. | ... | ... | 8 | 5 | 11 |
| Miscellaneous. | ... | 107 | 125 | 113 | 151 |
| Residence distribution: | | | | | |
| Maryland. | 593 | 723 | 804 | 633 | 775 |
| Outside Maryland | 152 | 204 | 229 | 207 | 241 |

The most significant fact in this tabulation is the recovery of attendance in 1934 after the falling off in the preceding year.

The tabulation shows a separation after 1930 of the group "high school teachers" into three sub-groups: high school teachers, junior high school teachers, and high school principals. The numbers in these three groups show an increase from 181 in 1930 to 209 in 1934. The number of regular college students increased from 126 in 1930 to 237 in 1934.

Experience of the past biennium confirms the statement in the past two reports that an increasing number of teacher-students in the Summer Session are matriculating as candidates for degrees. The increase in this biennium has been largely due to the expected adoption of the four-year curriculum by the Normal Schools (now realized). The number of graduate students in 1934 was 204, exactly the same as in 1932, though the total enrollment was slightly smaller. The importance of this phase of the Summer Session work has been covered in the current report of the College of Education.

The Demonstration Elementary School has been eliminated. The need for this type of service in the Summer Session has been greatly reduced owing to the efficiency of the elementary school supervision in the counties.

On the other hand, the Nursery School, made possible by F. E. R. A. funds, meets an urgent need.

Among the improvements continued or initiated during the biennium are: further development of a systematic program for music instruction, both for high school and elementary school teachers; further development of graduate courses in various fields; development of a

program of summer courses in Industrial Education and Commercial Education; development of a program of summer courses in Special Education (handicapped children); more courses for regular undergraduate students.

In the summers of 1933 and 1934 successful institutes have been conducted in cooperation with the Maryland Congress of Parents and Teachers.

The College of Engineering

DR. A. N. JOHNSON, *Dean.*

THE Engineering College offers courses in civil, electrical and mechanical engineering. Requests for the establishment of additional specialized courses are received constantly and there is good argument to be made in each instance; but, until resources are greater, we should and must confine the curriculums to those subjects which are regarded as fundamental to the three main branches of engineering; civil, electrical and mechanical.

There are two ways in which additional courses may be undertaken: first, by substituting for some other topic now taught; second, by adding to the engineering course an extra year.

By the first method various changes, mostly of a minor character, have been made from time to time in the various curriculums, endeavoring to keep the courses of instruction as equally divided as practicable as to time given among the three major divisions: humanities, mathematics and science, and technical courses.

No serious consideration has been given to plans involving the addition of a fifth year. However, it is not uncommon for students to take five years to cover the present course.

During the present biennium there have been no changes in the faculty save the appointment of Russell B. Allen as Assistant Professor of Civil Engineering to fill the vacancy caused by the death of Associate Professor R. H. Skelton.

In 1920 the enrollment in the Engineering College was 114. This number increased yearly until 1932, when peak of 410 was reached. In 1933 we had 321 students and in 1934, 305. Despite this loss in total enrollment it is significant that the enrollment in the freshman class in 1934 was greater than the previous year's class.

The addition to the Engineering Building which was erected three years ago is used chiefly by the Electrical Engineering Department which has been enabled to use its equipment to much greater advantage.

As stated in previous reports, more space for drawing rooms and additional equipment,—particularly for the Mechanical and Civil Engineering Departments,—should be provided.

The Engineering Lecture Hall, which joins the old portion of the Engineering Building with the new section, is in daily demand for class-room sessions. It has a seating capacity of 230 and is admirably adapted for the larger classes, which, prior to the erection of this building, had no suitable room in which to meet.

In the Materials Laboratory the testing of road cores for the State Roads Commission has continued. These cores are bored by a special drill from concrete roads as soon as they are built and brought to the laboratory where they are crushed to ascertain their strength. In this way a check is kept on the quality of the concrete.

The national honorary engineering fraternity, Tau Beta Pi, established a chapter at the University of Maryland in 1929. The interest in this organization has continued and has added keen incentive for the development of good scholarship. There has been recently inaugurated a series of luncheon meetings by Tau Beta Pi, the purpose being to bring prominent speakers to these meetings.

The Night Mining Classes for Coal Mine Employees were conducted in the Western Maryland coal field throughout the years 1933 and 1934. Classes were constantly being formed in new districts where instruction has not heretofore been given, and the work has also been continued in the older mining towns where it has been given since the inception of the classes in 1923. These classes are conducted through cooperation by the University of Maryland, the State Department of Education, the Boards of Education of Allegany and Garrett Counties, and the Maryland Bureau of Mines. Classes have been conducted during the past eleven years. These Night Mining Classes are held every week night except Saturday.

In addition to the Night Mining Classes there is a Six Weeks intensive Short Course for Coal Mine Employees conducted in the daytime during the summer especially for candidates intending to stand the examination for mine foremen and fire bosses in August of each year.

At a dinner on the evening of November 23, 1934, Vocational Mining Instructor L. C. Hutson reported that 97 per cent of the mine officials in Maryland have attended the Night Mining Classes or the Short Courses, and 85 per cent have acquired their present positions since attending.

The Short Course for Volunteer Firemen which was organized and the first session held in the summer of 1930 has continued each year. The session held in September, 1934, had a registered attendance of 155, as against 74 for the previous year. There were 50 visitors

and 25 drill and salvage demonstrators, making a total attendance of 230. One hundred and forty-four certificates were issued to those attending every session of the course. There were delegates from 60 Maryland fire companies and 3 out-of-state companies; 30 companies which were not represented in 1933 sent men this year. There were 19 Maryland counties represented.

The arrangement of the program was somewhat different than that in previous years. The members of the class were divided into three groups and instruction given each group separately. This was made possible through the cooperation of the Baltimore Fire Department and the Washington, D. C., Fire Department, each of which sent experienced drill masters. As mentioned in the previous report, the value of this work in prevention and fighting fires is obvious. It is a form of most effective fire insurance for an extremely low premium.

In November, 1933, Professor S. S. Steinberg, Head of the Department of Civil Engineering, was appointed by the Director of the U. S. Coast and Geodetic Survey, with the approval of American Engineering Council, its State Representative in Maryland, to take administrative charge of a program of local control surveys throughout the State under the auspices of the Civil Works Administration. The purpose of the program was to provide a network of lines and elevations of value to engineers and surveyors for mapping and as basic control for all engineering projects. The College of Engineering cooperated by furnishing office space for headquarters in the Engineering Building. In the development of this work employment was given to practically every unemployed engineer and surveyor in Maryland, in addition to many non-technical men who served as assistants. The total number employed was 420 men, consisting of 40 surveying parties operating in all sections of the State.

After the close of the C. W. A. program, the project was continued on a smaller scale by the Maryland Emergency Relief Administration until the spring of 1934. At present a small group of engineers is engaged in the computation of the field data secured thus far. This work is being financed by the U. S. Coast and Geodetic Survey with funds furnished by the Federal Public Works Administration.

In January, 1934, Professor Steinberg was honored by being elected President of the Maryland Association of Engineers, an organization whose membership includes engineers employed by State, city and county engineering departments, as well as consulting engineers and those in the employ of private engineering organizations throughout the State.

The Graduate School

DR. C. O. APPLEMAN, *Dean*.

THE last report explained in some detail the functions of the Graduate School and the importance of the interests served. The present report will deal with the progress and changes that have occurred during the biennium.

Enrollment—The number of students enrolled in the Graduate School for the regular academic year increased steadily from a total of 13 in 1919-1920 to a maximum of 259 for the first year of the biennium just closed. Although the total for the biennium exceeds that of the previous biennium by 27, there was a decrease of 22 per cent from the first half to the second half of the biennium. The number of new students enrolled for the second year of the biennium was 39.6 per cent less than the number matriculated during the first year of the biennium. With the beginning of the second half of the biennium the fees of the Graduate School were increased from \$1.50 to \$4.00 per credit hour, an increase of 166 per cent, but it is not known to what extent this increase of fees affected the enrollment.

The above figures do not include the summer school enrollment for the corresponding two years. In 1933, 190 graduate students were enrolled for the summer session, and 206 in 1934. Approximately 80 per cent of summer school enrollment is made up of teachers who attend the university in summers only; the fees charged are the regular summer school fees. The number of graduate students enrolled in the summer sessions has been approximately on a level for the past four years.

Requests for Graduate Work—The departments which offer graduate work were able to accept nearly all of the qualified applicants except those who applied for fellowships and graduate assistantships. Only a small percentage of these was appointed. There were a number of inquiries about graduate work in subjects in which we do not at present offer graduate work: Latin, Journalism, Philosophy, Geography and Geology. Requests were also received for major work leading to the Ph. D. degree in departments which offer graduate work for the master's degree only. Most of these requests were confined to the following group: Education, Engineering, Economics, Psychology, Public Speaking, Political Science, and Sociology.

Degrees Conferred—During the biennium 134 advanced degrees were conferred. This is an increase of 17 over the previous biennium. During the biennium just closed, however, there was a decrease from 75 in 1933 to 59 in 1934.

An examination of the distribution of degrees according to colleges in which the major work was pursued shows a decrease in number of master's degrees in the College of Agriculture, Arts and Sciences, and Education, in the second year of the biennium. We find an increase in the entire biennium over the previous one in the College of Arts and Sciences and in the College of Education, and a decrease in the College of Agriculture. The number of master's degrees in the College of Arts and Sciences and in the College of Agriculture was practically equal during the previous biennium; while in the biennium just closed, the number in the College of Arts and Sciences was more than twice that in the College of Agriculture. The College of Agriculture still leads in the number of Ph. D. degrees conferred, although the proportionate lead has decreased somewhat. Table No. 3 shows in detail the distribution.

In Table No. 4 the analysis is extended to show departmental distribution. The decrease in total number of master's degrees during the second year of the biennium was roughly proportional to the decrease in total enrollment, and was spread fairly evenly over the respective departments. The Department of Chemistry showed the greatest decrease in 1934; the College of Education showed a slight increase. The number of Ph. D. degrees for that year, 15, despite the general decrease, was the greatest in the history of the Graduate School. The Department of Botany and Chemistry showed the greatest increase in the number of doctorates.

The inclusion of figures in Table 4 to show departments in which minor work was pursued serves to indicate the total graduate load carried in the various departments. In certain subjects, such as History, Modern Language and Physics, a heavy load of minor work is carried by graduate students which is not evident when figures showing only major subjects are examined. Some departments which give a considerable amount of major work also offer many students minor work, such as the Departments of Botany, Chemistry and Education.

Since the organization of the Graduate School in 1919, 455 master's degrees and 76 Ph. D. degrees have been conferred. The most significant fact in this connection is the increase in the number of doctor's degrees in recent years. Of the total, 76, all but 3 have been conferred in the past ten years. During the biennium just closed the number was 25, an increase of 10 over the previous biennium. During the past six years the greatest proportional increase in the number of degrees conferred has been in the departments of English, Modern Language, History and Education. There has been a considerable increase in the number of graduate students and the number of advanced degrees granted in the Schools of Pharmacy and Medicine in Baltimore. For the first time the Ph. D. was granted in 1933 to candidates from the School of Pharmacy, when two students in the

Department of Pharmaceutical Chemistry received the degree; and in 1934 the first Ph. D. degrees were conferred in the School of Medicine on two students from the Department of Anatomy.

Fellowships and Graduate Assistantships—There were 21 fellowships awarded during each year of the biennium. The graduate assistants in the various departments numbered 27 for the first year of the biennium and 30 for the second year. Although there was a small increase in the number of graduate assistants during the second year, the total cost was actually less because of the reduction of stipend for many of the graduate assistants. These fellows and graduate assistants are rendering very valuable and efficient service to the university at a very low cost. It is hoped that the stipend for the fellows will be restored as soon as possible to the original \$500, so that we can compete more favorably with other institutions for the superior students.

TABLE 1—GRADUATE SCHOOL ENROLLMENT

| Student Distribution | Academic Year | |
|---|---------------|-----------|
| | 1932-1933 | 1933-1934 |
| Total Enrollment | 259 | 202 |
| College Park Schools..... | 228 | 175 |
| Baltimore Schools | 31 | 27 |
| New Students | 101 | 61 |
| Students in Evening Classes only..... | 20 | 19 |
| Part Time Students (9 hours or less)..... | 104 | 90 |

TABLE 2—TOTAL ENROLLMENT IN EVENING CLASSES, INCLUDING STUDENTS WHO WERE ENROLLED IN DAY CLASSES ALSO

| Subject | Location | Academic Year | |
|--------------------|----------------|---------------|-----------|
| | | 1932-1933 | 1933-1934 |
| Chemistry | College Park.. | 21 | 13 |
| Chemistry | Baltimore..... | 23 | 16 |
| Bacteriology | College Park.. | 10 | .. |
| Total..... | | 54 | 29 |

TABLE 3—DEGREES CONFERRED, ACCORDING TO COLLEGE IN WHICH MAJOR WORK WAS PURSUED

| Name of College | Academic Year | | | | | |
|------------------------|---------------|-------|--------|-----------|-------|--------|
| | 1932-1933 | | | 1933-1934 | | |
| | M. S. | M. A. | Ph. D. | M. S. | M. A. | Ph. D. |
| Agriculture | 14 | .. | 5 | 9 | .. | 7 |
| Arts and Sciences..... | 16 | 18 | 3 | 7 | 10 | 5 |
| Education | .. | 11 | .. | .. | 10 | .. |
| Home Economics | 1 | .. | .. | 2 | .. | .. |
| Pharmacy | 5 | .. | 2 | 5 | .. | 1 |
| Medicine | .. | .. | .. | 1 | .. | 2 |
| Totals..... | 36 | 29 | 10 | 24 | 20 | 15 |
| Grand Total | 75 | | | 59 | | |

TABLE 4 — DEGREES CONFERRED, SHOWING DEPARTMENTAL DISTRIBUTION OF MAJOR AND MINOR WORK.

| Subject | Academic Year | | | | | | | |
|---|---------------|-------|--------|-------|-----------|-------|--------|-------|
| | 1932-1933 | | | | 1933-1934 | | | |
| | Master | | Doctor | | Master | | Doctor | |
| | Maj. | Min. | Maj. | Min. | Maj. | Min. | Maj. | Min. |
| Agricultural Econ. | 4 | ..... | ..... | ..... | 2 | 1 | ..... | ..... |
| Agronomy and Soils.... | 2 | ..... | ..... | ..... | 2 | ..... | ..... | 2 |
| Bacteriology. .... | ..... | ..... | ..... | ..... | 4 | 4 | ..... | ..... |
| Botany, including Plt. Phys. & Plt. Path.... | 2 | 10 | ..... | 4 | ..... | 3 | 6 | 6 |
| Chemistry. | 13 | 15 | 2 | 5 | 3 | 8 | 5 | 11 |
| Economics & Sociology.. | 1 | 4 | ..... | ..... | 1 | 2 | ..... | ..... |
| Education. | 11 | 16 | ..... | ..... | 10 | 12 | ..... | ..... |
| English. | 8 | 2 | ..... | ..... | 7 | 2 | ..... | ..... |
| Entomology. | 3 | ..... | 1 | ..... | 1 | 2 | ..... | 1 |
| Genetics & Statistics.... | ..... | 4 | ..... | 2 | ..... | 2 | ..... | ..... |
| History. | 5 | 9 | ..... | ..... | ..... | 5 | ..... | ..... |
| Home Economics | 1 | 1 | ..... | ..... | 2 | 1 | ..... | ..... |
| Horticulture. | 3 | ..... | 4 | ..... | ..... | ..... | 1 | 1 |
| Mathematics. | 1 | 1 | ..... | ..... | 1 | ..... | ..... | ..... |
| Medicine: | | | | | | | | |
| Pharmacology. .... | ..... | ..... | ..... | ..... | 1 | ..... | ..... | ..... |
| Physiology. .... | ..... | ..... | ..... | ..... | ..... | 1 | ..... | 2 |
| Anatomy. .... | ..... | ..... | ..... | ..... | ..... | ..... | 2 | ..... |
| Modern Language and Comparative Lit. | 4 | 6 | ..... | ..... | 2 | 1 | ..... | ..... |
| Pharmacy: | | | | | | | | |
| Pharm. Chemistry | 2 | 2 | 2 | ..... | 2 | 3 | 1 | ..... |
| Pharmacology. | 2 | 2 | ..... | 2 | 1 | 4 | ..... | 1 |
| Pharmacy. | 1 | ..... | ..... | ..... | 2 | ..... | ..... | ..... |
| Physics. | 1 | 9 | ..... | 3 | ..... | 3 | ..... | 5 |
| Zoology. | 1 | 4 | 1 | ..... | 3 | 3 | ..... | ..... |
| Total..... | 65 | | 10 | | 44 | | 15 | |
| Grand Total..... | 75 | | | | 59 | | | |

College of Home Economics

M. MARIE MOUNT, *Dean.*

WITH the home as the social unit of our civilization, homemaking has always been the most important work for women, and training for such work—whether at home or at school—is essential. The census of 1930 for the first time listed homemaking as a profession for women.

A home economics curriculum furnishes the training and education for this profession. The home economics woman may use her professional training in two ways: to earn her living or to manage a home and family.

Keeping these two aspects of home economics as a profession in mind, the following curriculums in the College of Home Economics have been planned: General Home Economics; Foods and Nutrition; Art, Textiles and Clothing; and Home and Institutional Management. The Home Economics Education curriculum will be found under the College of Education report. Within these curriculums more than half of the credits, both prescribed and elective, are in general subjects as in English, the Languages, Chemistry, Physics, Bacteriology, Economics, Sociology and Physiology, while less than half are in home economics subjects.

During the past two years there have been but few changes in the arrangement of the curriculums and no new courses have been added. Due to an increased enrollment it has been necessary to add more sections of courses already being given. One graduate assistant is the only addition to the staff. Since 1930 the enrollment in the College of Home Economics has increased 42 per cent. With another increase the laboratory facilities will be taxed.

All home economics students after the first semester of the Freshman year are eligible for membership in the Home Economics Club. Since the fall of 1932 this organization has sponsored an alumnae newsletter sent to former students four times each year. A special effort has been made by the faculty and the students to keep in touch with home economics alumnae through letters and visits.

In May of 1934 the College of Home Economics held its fifth annual Mothers' Day. At this time the mothers and friends of home economics students are invited to spend the day at the University in order that they may know what is being done. Exhibits, simple programs and demonstrations are given by the students. The visitors have been most enthusiastic about these occasions. They feel that it is an opportunity to see their daughters in their college environment and to meet those persons who are responsible for the direction of their education.

The graduate work in foods and nutrition continues to grow. During the past few years this department has conducted research in the baking qualities of pastry flour made from wheat grown in Maryland. As time goes on, other problems with foods produced in Maryland will be undertaken.

In the summer of 1933 under the Federal Emergency Relief a Nursery School was established at the University for the children of families on relief. During the summer this school was held at the Home Management House. It is now in the Home Economics Building, since the Home Management House is in use. The home economics students are receiving experience in child care and development in the Nursery School.

In spite of the bad times most of the graduates of the College of Home Economics have been placed in teaching positions; in institutional work, as hospital dietitians, tearoom and restaurant managers; and in the business world where the home economics trained woman represents the home makers viewpoint to the manufacturer and distributor of foods or household equipment. A few have been placed with newspapers or radio stations to write radio continuity and to conduct schools for homemakers.

School of Medicine

J. M. H. ROWLAND, M.D., *Dean.*

DURING the biennium the usual work of the School of Medicine has been carried on. No changes in the curriculum, except in the Junior year, have been attempted. The changes in this year's teaching are due to the inclusion of a greater number of hours of instruction at the Baltimore City Hospitals. The enrollment has increased somewhat during 1932-1934. One of the most marked changes in the enrollment relates to the resident students, e. g., in 1931 the resident students numbered 163; in 1932, 182; in 1933, 221; and in 1934, 220.

We are making a very definite attempt to reduce the number of students. To this end we are enrolling at the beginning of the 1934-1935 session about 20 fewer students in our Freshman class. This will be reflected through the succeeding years and eventually, after four years, will give us about 80 fewer students in the School. As those denied admittance will all be non-resident students, our reduced enrollment will cause a reduction in our income of about \$45,000 unless tuition fees are greatly increased or endowments are secured or greater State appropriations granted. Our fees are already quite high; only a few schools in the country are charging more, and nearly all are charging

much less. In fact we are charging more than any other State university in America.

We are not able to reduce our teaching staff in order to balance our budget, as we are already very much understaffed and the majority of our teachers underpaid. The relative number of full-time teachers to the number of students in the preclinical departments does not fully meet the requirements of first-class medical schools.

New University Hospital

The Medical School will benefit greatly from the building of the New Hospital. We have now, for the first time, a satisfactory number of hospitalized patients available for teaching. With our own 400-bed hospital, control of the free clinics at the Mercy Hospital, and the medical supervision of one-half of all cases in the New Baltimore City Hospitals, we will have an entirely adequate number of hospital cases for teaching purposes, except in the Department of Pyschiatry. For the present we shall have to depend upon our affiliated institutions for these cases.

Outdoor Dispensary and Clinic

The removal of our hospital sick to our New Hospital leaves our old hospital building for utilization as an outdoor clinic and dispensary. It is proposed to use the whole of this building, with the exception of two portions (one to be used for accommodations of nurses and the other for laboratory purposes) for dispensary purposes. While we are not able at this time to make sufficient alterations in this building to satisfy all our requirements, we shall be able to remove most of our clinics out of the gloomy basement which has been their home for many years.

The Dispensary continues to care for a vast number of cases. Nearly 116,000 visits were made to the various clinics last year. Much of the social service rendered by these clinics is of vast service to a large section of the city and adjacent portions of the State. It, of course, furnishes our students with an almost inexhaustible supply of clinical material. In addition to the other activities of the clinic, more than a thousand obstetrical cases are cared for each year in the homes of the patients.

Number of Hospital Cases

The new Baltimore City Hospitals Building, which, in the matter of medical supervision, will be entirely under the control of the teaching staffs of the Johns Hopkins University and the University of Maryland, will be a splendid addition to the hospital facilities of the City of Baltimore. The medical control of this addition to the City's facilities for the care of its sick by the combined faculties of the Johns Hopkins University and the University of Maryland, insures an unusually efficient type of medical service for the City's sick.

Department of Psychiatry

We have increased our teaching facilities in the matter of Psychiatry by the addition to our psychiatric teaching staff of one half-time teacher and a full-time social service worker. These workers will be associated with the clinic already established under the supervision of the Mental Hygiene Society at the University of Maryland. This clinic is not only of great benefit to our students, but is invaluable to the community as a reference clinic for many of the problem cases so numerous in every community.

Department of Pediatrics

Our removal to the New Hospital has enabled us to place our Department of Pediatrics upon a much more satisfactory basis. Heretofore, the number of beds allotted to children was entirely inadequate. The department has been reorganized and a "half-time" head of the department, Dr. C. Loring Joslin, has been appointed.

Department of Oral Surgery

A sub-department of Oral Surgery, in charge of Dr. Robert P. Bay, has been added to the Surgical Department, supplying for the first time systematic instruction in this important branch of Surgery.

Medical Extension

The Thursday afternoon clinics have continued to attract a splendid attendance of students and graduate physicians of the State. The lecturers at these clinics are visitors invited from neighboring medical schools, both in Baltimore and nearby cities. The course of lectures on Medical History given by Dr. John Rathbone Oliver continues to be popular and well attended. When requested, we arrange for extra-mural review courses in other cities and towns of Maryland.

Additional Needs

In addition to the pressing necessity for improvement in our outdoor clinic and dispensary, our preclinical courses, with the exception of Pathology, Biological Chemistry, Bacteriology and Immunology, are still inadequately housed. The School is greatly in need of a building or buildings to properly house the departments of Anatomy, Pharmacology and Physiology.

Additional room and fireproof stacks are badly needed for our Library, which contains a great number of valuable volumes, and is at all times subject to the possibility of entire destruction because of the inflammable type of building in which it is housed.

Research

Research activity is being carried on by nearly all of the departments of the School. This phase of our school work, as well as post-graduate

and graduate teaching, is greatly hampered by lack of facilities and funds. The income of the Isaac E. Emerson, John F. B. Weaver and Charles M. Hitchcock Funds is being used to good advantage but is inadequate for a satisfactory development of this very desirable function of a Medical School.

Faculty Changes

New appointments and promotions in the Faculty have already been published in the Bulletin. We have suffered the loss by death of:

Dr. Samuel K. Merrick, Emeritus Professor of Rhinology and Laryngology.

Dr. L. E. Neale, Emeritus Professor of Obstetrics.

Dr. Standish McCleary, Professor of Pathology and Clinical Medicine.

Dr. John Ruhrah, Professor of Pediatrics.

Dr. Melvin S. Rosenthal, Professor of Dermatology.

Dr. Horace M. Davis, Professor of Exodontia.

Dr. Hugh Brent, Professor of Clinical Gynecology.

Dr. C. C. Conser, Associate Professor of Physiology.

Dr. J. Harry Ullrich, Associate Professor of Gastro-Enterology.

Dr. Charles C. Habliston, Associate Professor of Medicine.

In the main, our work in the School is going along fairly satisfactorily. We believe that the course is being constantly improved, and that each year we are graduating classes of men still better qualified for the beginning of the practice of medicine than those in previous classes. There is still great room for improvement in our physical environment and a great need of additional full-time teachers. We are hoping that in some way these needs may be supplied.

University Hospital

A. J. LOMAS, M. D., *Superintendent.*

A review of the work accomplished by the University Hospital during the two biennial years 1933-1934 will show that in spite of the serious economic disturbance the hospital has been able to maintain its large volume of service to the citizens of the State. At no time has the free service of the hospital during this period been curtailed, although during the latter months of 1934 some diminution in the admissions was brought about owing to the necessity of making preparations for removal to the new building.

On the other hand, during this long period, there was a serious falling off of pay patients, and during most of the time an entire floor of private accommodation was closed. This meant, of course, that the income of the institution suffered serious depletion. Every curtail-

ment possible was made, even including a wage reduction, which made it possible for the hospital to operate nearly within its budget, and a transfer of funds from the Medical School brought about a balanced budget for each of the two years.

It will also be noted that the free admissions amounted to more than half of the total patients admitted to the institution, which surely is indicative of the amount of service rendered to the indigent sick of the State.

In such services as the Surgical Operating Department the very large amount of work will seem surprising when one compares this quantity of work to the physical facilities at hand.

The Accident Department, during this period, continued its tremendous service and well over 1,000 accidents a month were taken care of.

One will surely not fail to review the statistics of our Out-Patient Maternity Department, and will note the tremendous service that is being afforded the citizens of Baltimore. It is surprising to think how visits to patient's homes by medical and nursing staff amount to 24,000 and even 26,000 per month.

Our general dispensary service has been maintained under extremely trying conditions. In fact, it indicates the zeal and interest of the attending staff, when one reviews the large number of cases that have been treated in this department under inadequate physical conditions that cannot be described in words. The entire basement, each day, during the busy hours, is crowded to serious congestion and day after day there is a long queue of people standing on the sidewalk of Greene Street waiting for admission.

It is extremely satisfying to note that with the removal of patients to the new hospital it is now possible to remodel the old building and it is hoped that before many weeks this intolerable dispensary condition will have been removed, and the entire building taken over for this much needed service.

The removal to the new hospital took place just after the close of the past biennium, but here it is well to observe the wonderful relief that has been experienced by patients, as well as the entire staff, in the splendid accommodations that have been provided.

The new building has turned out to be certainly one of the best in the country and with its many modern improvements and various new facilities for the treatment of the sick, much is to be expected in the future. Of course, with this increased accommodation comes an increased financial burden. At the present time it is difficult to see how the hospital is to operate at its best and take care of the tremendous increase in the volume of work under the present physical set-up. This, of course, is a matter for the new biennium and will be dealt with at a later date.

A tremendous chorus of appreciation and gratitude has been sent up by all concerned—patients, staff and public—for this great relief in our hospital situation.

UNIVERSITY HOSPITAL—RECEIPTS AND DISBURSEMENTS

(Condensed Statement)

| Receipts | | Total | |
|---|--------------|--------------|--------------|
| | 1933 | 1934 | Two Years |
| Cash on Hand, October 1st..... | | \$166.00 | \$166.00 |
| Room and Ward Patients, including Board of Special Nurses..... | \$105,337.24 | 110,957.04 | ..... |
| Other Special Services and Supplies to Patients | 55,955.43 | 66,659.33 | ..... |
| Total Collected from Patients... | \$161,292.67 | \$177,616.37 | 338,909.04 |
| State of Maryland | 60,000.00 | 85,000.00 | 145,000.00 |
| City of Baltimore | 34,755.65 | 33,651.60 | 68,407.25 |
| Balance, McPherson Estate..... | | 53.06 | 53.06 |
| Income, Harvey Estate | 2,100.00 | | 2,100.00 |
| Estate of Fannie Pentz..... | 225.00 | | 225.00 |
| Donations | 1,057.16 | 561.92 | 1,619.08 |
| Other Miscellaneous Receipts..... | 19,541.01 | 21,493.64 | 41,034.65 |
| Transferred from School of Medi- cine | 10,288.16 | | 10,288.16 |
| Frederick Bauernschmidt Estate... | | 5,600.00 | 5,600.00 |
| Total Cash Received..... | \$289,259.65 | \$324,145.59 | \$613,405.24 |
| Expenditures | | | |
| Subsistence | \$41,435.20 | \$41,722.44 | \$83,157.64 |
| Housing Supplies, Fuel, Gas and Electricity, etc. | 34,429.82 | 46,411.05 | 80,840.87 |
| Medical and Surgical Supplies and Nursing Attention | 32,359.67 | 40,714.72 | 73,074.39 |
| Pay Roll | 161,876.72 | 144,665.94 | 306,542.66 |
| Administration | 7,221.46 | 7,420.45 | 14,641.91 |
| Maintenance of Property | 6,585.75 | 12,885.44 | 19,471.19 |
| Betterments to Buildings and Equipment | 529.20 | 1,296.25 | 1,825.45 |
| Miscellaneous | 4,655.83 | 3,604.90 | 8,260.73 |
| Transferred to New Building Equip- ment Fund | | 25,424.40 | 25,424.40 |
| Total Cash Disbursed | \$289,093.65 | \$324,145.59 | \$613,239.24 |
| Bills Unpaid September 30th..... | 166.00 | None | 166.00 |
| Total Expenditures | \$289,259.65 | \$324,145.59 | \$613,405.24 |
| Cash on Hand September 30th.... | None | None | ..... |
| Cost per patient per day, operating expense only | \$4.04 | \$4.15 | ..... |
| City allowance per day for free patients | 1.55 | 1.55 | ..... |
| Cost per patient day, ward patient, estimated | 4.00 | 4.00 | ..... |

UNIVERSITY HOSPITAL—RECEIPTS

| | 1933 | 1934 | Total Two Years |
|--------------------------------------|---------------------|---------------------|---------------------|
| Cash on Hand, October 1st..... | None | \$166.00 | \$166.00 |
| State of Maryland..... | \$60,000.00 | \$5,000.00 | 145,000.00 |
| Private Patients' Board..... | 51,917.68 | 57,586.56 | 109,504.24 |
| Ward Patients' Board..... | 80,590.52* | 79,739.50† | 160,330.02 |
| Operating Room Fees | 14,684.40 | 15,693.94 | 30,378.34 |
| Laboratory Fees | 6,417.25 | 8,328.35 | 14,745.60 |
| X-Ray Fees | 15,497.87 | 14,980.75 | 30,478.62 |
| Special Nurses' Board..... | 7,341.57 | 7,282.58 | 14,624.15 |
| Dispensary Fees | 2,644.25 | 3,230.51 | 5,874.76 |
| Accident Room Fees | 4,718.91** | 5,186.62‡ | 9,905.53 |
| Medical and Surgical Supplies, Drugs | 7,720.15 | 14,419.66 | 22,139.81 |
| Anaesthetic Fees | 3,234.87 | 3,145.50 | 6,380.37 |
| Commissions | 295.05 | 286.65 | 581.70 |
| Electrocardiographic Fees | 422.50 | 396.00 | 818.50 |
| Expense Recovered from Other.... | 16,316.80 | 18,457.93 | 34,774.73 |
| Oxygen Rooms | 820.00 | 1,257.00 | 2,077.00 |
| Oncology | 38.35 | 21.00 | 59.35 |
| Miscellaneous Sales | 2,929.16 | 2,752.06 | 5,681.22 |
| Total Hospital Receipts..... | \$275,589.33 | \$317,930.61 | \$593,519.94 |
| Donations | 1,057.16 | 561.92 | 1,619.08 |
| Income, Harvey Estate | 2,100.00 | ..... | 2,100.00 |
| Estate of Fannie Pentz..... | 225.00 | ..... | 225.00 |
| Balance, McPherson Estate..... | ..... | 53.06 | 53.06 |
| Transfer from School of Medicine. | 10,288.16 | ..... | 10,288.16 |
| Frederick Bauernschmidt Estate.. | ..... | 5,600.00 | 5,600.00 |
| Total Receipts | \$289,259.65 | \$324,145.59 | \$613,405.24 |

EXPENDITURES

| | | | |
|------------------------------------|---------------------|---------------------|---------------------|
| New Equipment | \$529.20 | \$1,296.25 | \$1,825.45 |
| Operating | | | |
| Salaries and Wages..... | 161,876.72 | 144,665.94 | 306,542.66 |
| Food Supplies | 41,435.20 | 41,722.44 | 83,157.64 |
| Fuel | 19,890.55 | 24,953.29 | 44,843.84 |
| Office Supplies, Stationery and | | | |
| Printing | 2,655.91 | 2,335.37 | 4,991.28 |
| Medical and Surgical Supplies.... | 27,207.80 | 33,881.34 | 61,089.14 |
| Household, Laundry, Cleaning.... | 8,212.35 | 14,412.32 | 22,624.67 |
| Training School Supplies | 1,590.75 | 3,405.52 | 4,996.27 |
| X-Ray Supplies | 3,561.12 | 3,427.86 | 6,988.98 |
| Other Miscellaneous Supplies and | | | |
| Refunds | 3,669.61 | 2,607.05 | 6,276.66 |
| Renewals and Replacements and Ma- | | | |
| terial for Repairs | 6,585.75 | 12,885.44 | 19,471.19 |
| Light, Heat, Power and Water.... | 6,326.92 | 7,045.44 | 13,372.36 |
| Transportation and Communication | 4,565.55 | 5,085.08 | 9,650.63 |
| Insurance | 986.22 | 997.85 | 1,984.07 |
| Transferred to New Hospital Equip- | | | |
| ment Fund ..... | ..... | 25,424.40 | 25,424.40 |
| Total Disbursements | \$289,093.65 | \$324,145.59 | \$613,239.24 |
| 1933 Bills Unpaid..... | 166.00 | None | 166.00 |
| Total Expenses | \$289,259.65 | \$324,145.59 | \$613,405.24 |

* Includes \$33,980.65 from City of Baltimore.

** Includes \$775.00 from City of Baltimore

† Includes \$32,876.60 from City of Baltimore.

‡ Includes \$775.00 from City of Baltimore.

STATISTICS

| Admissions | 1933 | 1934 |
|-------------------------------|-------|-------|
| Private and Semi-Private..... | 959 | 1,021 |
| Part Pay Ward..... | 1,268 | 1,327 |
| Free City | 1,454 | 1,452 |
| Free State | 1,432 | 1,337 |

| | | |
|-----------------------|-------|-------|
| Total Admissions..... | 5,113 | 5,137 |
|-----------------------|-------|-------|

Hospital Days

| | | |
|--|--------|--------|
| Private and Semi-Private Patient Days..... | 10,844 | 11,602 |
| Part Pay Ward Patient Days..... | 14,893 | 15,613 |
| Free City Patient Days..... | 23,700 | 22,816 |
| Free State Patient Days..... | 22,103 | 21,709 |

| | | |
|-------------------------|--------|--------|
| Total Patient Days..... | 71,540 | 71,740 |
|-------------------------|--------|--------|

Free Admissions equal 56.4% of total.

Free Patient Days equal 64.03% of total.

Deaths

| | | |
|-----------------------------------|-----|-----|
| Institutional | 241 | 227 |
| Within 24 hours of admission..... | 70 | 74 |
| Infants | 15 | 22 |

| | | |
|-------------------|-----|-----|
| Total Deaths..... | 326 | 323 |
|-------------------|-----|-----|

| | | |
|----------------|-----------|-----------|
| Autopsies..... | 127=38.7% | 121=37.1% |
|----------------|-----------|-----------|

Operating Room

| | | |
|---|-------|-------|
| *Major Operations | 1,742 | 1,638 |
| Minor Operations | 455 | 660 |
| Nose and Throat Operations..... | 532 | 478 |
| Eye Operations | 45 | 53 |
| Ear Operations | 35 | 23 |
| Broncoscopies and Laryngoscopies.... | 282 | 223 |
| Surgical Dressings | 580 | 468 |
| Treatments Looper Clinic..... | 220 | 135 |
| Examinations | 740 | 607 |
| Treatments, Vascular Clinic (Feb. 1st to Sept. 30th)..... | ... | 1,500 |

| | | |
|---------------------|-------|-------|
| Total Patients..... | 4,631 | 5,785 |
|---------------------|-------|-------|

Anaesthetics

| | | |
|----------------|-------|-------|
| †General | 2,138 | 2,244 |
| Local | 495 | 468 |
| Spinal | 272 | 143 |

| | | |
|-------------------------|-------|-------|
| Total Anaesthetics..... | 2,905 | 2,855 |
|-------------------------|-------|-------|

Accident Department

| | | |
|--------------------|--------|-------|
| New Patients | 10,002 | 9,925 |
| Revisits | 3,125 | 2,544 |

| | | |
|---------------------|--------|--------|
| Total Patients..... | 13,127 | 12,469 |
|---------------------|--------|--------|

*1933—Fractures and Casts 187; Caesareans 52.

1934—Fractures and Casts 124; Caesareans 49.

†Avertin—1933, 542; 1934, 365.

Obstetrics

| | | |
|-------------------------|-----|-----|
| Patients Admitted | 460 | 487 |
| Babies Born | 400 | 394 |
| Babies Stillborn | 29 | 34 |
| Babies Premature | 51 | 42 |
| Babies Died | 15 | 22 |
| Maternal Deaths | 12 | 9 |

Out-Patient Obstetrics

| | | |
|--|--------|--------|
| Patients Registered in Dispensary..... | 2,166 | 2,291 |
| Patient Visits to Dispensary..... | 9,376 | 10,366 |
| White Patients Delivered at Home..... | 213 | 232 |
| Colored Patients Delivered at Home... | 850 | 934 |
| Total Patients Delivered at Home..... | 1,063 | 1,166 |
| Visits to Patients Homes..... | 24,454 | 26,839 |
| (By Medical and Nursing Staff) | | |

Note: The number of patients cared for at home this year is much less than past years. This decline is due entirely to financial conditions, our city appropriation for this work having been seriously decreased.

General Dispensaries

| | 1933 | | | 1934 | | |
|---------------------|--------------|----------|---------|--------------|----------|---------|
| | New Patients | Revisits | Total | New Patients | Revisits | Total |
| Pediatrics | 3,190 | 20,159 | 23,349 | 2,904 | 17,194 | 20,098 |
| Dermatology ... | 7,163 | 9,358 | 16,521 | 8,209 | 9,176 | 17,385 |
| Surgery | 3,562 | 10,967 | 14,529 | 2,665 | 9,911 | 12,576 |
| Obstetrics | 2,166 | 7,210 | 9,376 | 2,291 | 8,075 | 10,366 |
| Medicine | 1,944 | 8,931 | 10,875 | 1,595 | 4,700 | 6,295 |
| Genito-Urinary.. | 888 | 4,565 | 5,453 | 491 | 3,247 | 3,738 |
| Eye | 1,606 | 3,065 | 4,671 | 1,439 | 3,744 | 5,183 |
| Nose and Throat | 1,490 | 1,309 | 2,799 | 1,019 | 1,437 | 2,456 |
| Gynecology | 1,752 | 4,074 | 5,826 | 1,511 | 3,539 | 5,050 |
| Orthopedics | 1,501 | 9,574 | 11,075 | 1,488 | 9,160 | 10,648 |
| Neurology | 412 | 957 | 1,369 | 224 | 1,011 | 1,235 |
| Gastro-Intestinal | 443 | 1,937 | 2,380 | 420 | 2,021 | 2,441 |
| Cardiology | 180 | 993 | 1,173 | 317 | 1,383 | 1,700 |
| Proctology | 222 | 662 | 884 | 163 | 584 | 747 |
| Cystocopy | 74 | 328 | 402 | 91 | 340 | 431 |
| Tuberculosis ... | 452 | 1,071 | 1,523 | 325 | 1,099 | 1,424 |
| Oncology | 182 | 1,376 | 1,558 | 220 | 1,851 | 2,071 |
| Ear | 362 | 404 | 766 | 224 | 404 | 628 |
| Mental Hygiene. | 599 | 1,587 | 2,186 | 494 | 1,172 | 1,666 |
| Oral Surgery.... | ... | ... | ... | 1,100 | 1,144 | 2,244 |
| Allergy | ... | ... | ... | 102 | 4,871 | 4,973 |
| Total All Clinics.. | 28,188 | 88,527 | 116,715 | 27,292 | 86,063 | 113,355 |

DETAILS OF ADMISSIONS TO HOSPITAL

| | 1933 | | | | 1934 | | | |
|-----------------------|-------|--------|----------|-------|-------|--------|----------|-------|
| | Male | Female | Children | Total | Male | Female | Children | Total |
| Surgical | 1,213 | 537 | 141 | 1,891 | 1,283 | 543 | 148 | 1,894 |
| Medical | 508 | 299 | 15 | 822 | 480 | 295 | 6 | 781 |
| Gynecology | ... | 399 | ... | 399 | ... | 426 | ... | 426 |
| Obstetrics | ... | 460 | ... | 460 | ... | 487 | ... | 487 |
| Babies | ... | ... | 400 | 400 | ... | ... | 417 | 417 |
| Orthopedic | 33 | 25 | 8 | 66 | 36 | 20 | 6 | 62 |
| Genito-Urinary | 90 | ... | ... | 90 | 97 | ... | ... | 97 |
| Eye and Ear | 17 | 5 | 11 | 33 | 30 | 14 | 9 | 53 |
| Nose and Throat | 184 | 143 | 327 | 654 | 196 | 141 | 262 | 599 |
| Neuro-Surgery | 18 | 6 | 2 | 26 | 20 | 12 | 8 | 40 |
| Oncology | 30 | 12 | 4 | 46 | 31 | 8 | 1 | 40 |
| Neurology | 28 | 18 | 2 | 48 | 21 | 20 | ... | 41 |
| Pediatrics | 94 | 80 | ... | 174 | 92 | 77 | ... | 169 |
| Dermatology | 2 | 2 | ... | 4 | ... | ... | ... | ... |
| Dental Surgery | ... | ... | ... | ... | 12 | 12 | ... | 24 |
| Total | 2,217 | 1,986 | 910 | 5,113 | 2,218 | 2,055 | 864 | 5,137 |

School of Nursing

ANNIE CRIGHTON, R. N., *Superintendent of Nurses.*

The following report for the School of Nursing covers the period from September 1, 1932, to September 1, 1934:

| | |
|---|--------|
| Assistants: | |
| Day | 2 |
| Night | 2 |
| Instructors: | |
| Theory | 1 |
| Practice | 2 |
| In Charge: | |
| Dispensary | 1 |
| Operating Room | 1 |
| Maternity | 1 |
| Nurses' Home | 1 |
| Head Nurses: | |
| Lower Halls | 0 |
| Upper Halls | 1 |
| Gepper Halls—Night Duty | 1 |
| Wards A and B | 1 |
| Ward G | 1 |
| Ward H | 1 |
| Ward I | 1 |
| Children's Ward | 1 |
| Assistants in Operating Room | 2 |
| Surgical Supply Room | 1 |
| Accident Room | 1 |
| Outside Obstetrics—Prenatal | 2 |
| Outside Obstetrics—Delivery | 2 |
| Outside Obstetrics—Post-partum | 2 |
| Baltimore and Ohio Dressing Room | 1 |
| Oxygen Chamber | 2 |
| Pupil Nurses Filling Head Nurses' Positions: | |
| Colored Women's and Men's Medical and Surgical Ward | 1 |
| Student Nurses: | |
| Graduates | 15 |
| Seniors | 27 |
| Intermediates | 28 |
| Juniors | 10 |
| Total number of student nurses at present | 80 |
| Post-graduate students | 16 |
| Special nurses | 1,596 |
| Total number of student nurses who left the school | 55 |
| Their reasons for leaving the school were illness and inability to meet the demands of nursing. | |
| Total number of days lost through illness | 1,809½ |

During the two years 279 nurses were off duty for varying lengths of time because of illness. Of these, 99 were admitted to the Private Halls or Sydenham Hospital for treatment and the remainder cared for in the Nurses' Home.

| | |
|---|-------|
| Requests for information and admission..... | 1,039 |
| Number of students entered in October, 1932..... | 37 |
| Number of students entered in February, 1933..... | 11 |
| Number of students entered in October, 1933..... | 38 |
| Number of students entered in February, 1934..... | 15 |

New Appointments:

- Marie Cox—General Night Duty, Upper Halls.
Graduate University of Maryland Hospital, 1931.
- Luella Rodes—General Night Duty, Upper Halls.
Graduate University of Maryland Hospital, 1932.
- Ruth Young—Outside Obstetrical Department.
Graduate University of Maryland Hospital, 1929.
- Eva Holloway—Supervisor of Dispensary.
Graduate of University Hospital, 1932.
- Josephine Toms—Assistant in Operating Room.
Graduate of University Hospital, 1931.
- Louise Martin—Outside Obstetrical Department.
Graduate of University Hospital, 1931.
- Margaret Currens—Head Night Nurse on Private Hall.
Graduate of University Hospital, 1928.

Resignations:

- Gladys Adkins—Assistant Supervisor in Operating Room.
Accepted position of Supervisor in another hospital.
- Carrie Miller—Assistant in Operating Room.
Due to decrease in staff.
- Elizabeth Trice—Outside Obstetrical Service.
To be married.
- Luella Rodes—Head Night Nurse on Private Hall.
Resigned to be married.
- Ruth Young—Outside Obstetrical Service (Delivery).
Resigned to be married.

Deaths:

- Jane Moffett—February 22, 1933.
Supervisor of Dispensary.

Temporary Appointments:

- Maurice Hardin—Relief Nurse for vacations.
- Mary Emery—Relief Nurse for vacations.
- Ruth Schaffer—Outside Obstetrical Service (Delivery).
- Margaret Sherman—Relief Nurse for vacations.
- Ruth Dahmer—Relief Nurse for vacations.

Reappointments:

- Vesta Swartz—Assistant Superintendent of Nurses.
- Helen Wright—Instructor in Practical Nursing.
- Lillie Hoke—Instructor in Theoretical Nursing.
- Elizabeth Aitkenhead—Supervisor Operating Room.
- Lucy Brude—Supervisor Upper Halls.
- Estelle Baldwin—Head Nurse Ward C.
- Beatrice Krause—Supervisor Maternity.
- Emma Winship—Supervisor Accident Room.
- Grace Dick—Head Nurse Ward G.
- Stella Ricketts—Outside Obstetrical Nurse—Pre-natal Service.
- Catherine Rodenwald—Outside Obstetrical Nurse—Pre-natal Service.
- Harriet Schroeder—Outside Obstetrical Nurse—Post-partum Service.
- Evelyn Zapf—Outside Obstetrical Nurse—Post-partum Service.
- Cora Mason Wilson—Supervisor Surgical Dressing Room.

The School of Law

ROGER HOWELL, LL.B., PH.D., *Dean.*

STUDENT enrollment at the Law School has continued to show a steady and somewhat unexpected increase during the past biennium. First-term registration for 1934-35 showed an increase of more than 16% over corresponding registration for 1932-33 and an increase of more than 11% over that for 1933-34. The increase has been slightly greater in the Evening School than in the Day School; this is particularly gratifying in view of the fact that the Evening School is under the necessity of competing with another night law school having lower entrance requirements, less exacting standards of work, and a one-year shorter course of study. Students enrolled are preponderantly residents of Maryland, there being only 12 registered as non-residents; of these, some are classified as non-residents who are actually bona fide residents of the State, because of the University rule requiring one year's residence in the State prior to entrance in order to obtain resident status.

It is not believed that any appreciable further increase in student enrollment should be anticipated. The present enrollment is in fact larger than would be expected for a Class A Law School in a State having the population of Maryland, particularly bearing in mind the exceptionally high tuition charge at this School. The 1933 Report on Legal Education of the Carnegie Foundation shows that of the 34 other State University Law Schools in the United States only 14 had larger enrollments than this School, all of these being in States of considerably greater population; while 20 had smaller enrollments, many of these being also in larger States than Maryland. The tuition charge at this School is shown as larger than that of any other State University Law School in the Country, and is more than double that charged at the majority of such State University Schools.

Changes in Faculty and Curriculum

The last Biennial Report stressed the need of enlarging and revising the curriculum in order to keep pace with standard legal education in this Country and of additional instructors to enable this to be done. Since that time one additional full-time instructor has been added, making a total faculty of six full-time and twelve part-time instructors. This is still a smaller faculty than that in many schools operating only one division instead of two as is the case here. A course in Creditors' Rights and a non-classroom elective course in Title Examination and Draftsmanship have been added; courses in

Partnership in the Day School and in Insurance and Admiralty in the Evening School have been restored; the course in Evidence in both schools has been lengthened; and the separate courses in Suretyship and Mortgages have in both schools been combined into a course in Surety Devices and the Rights of Secured Creditors. It has not as yet been possible to add other courses which are regarded as desirable—particularly courses in Administrative Law and Taxation and advanced courses in Corporate Management and Finance. In revising the curriculum, however, provision has been made so that these courses may be fitted into the present schedule in future without difficulty, if sufficient funds are made available for such purpose.

Faculty Research Activities

During the past biennium the Maryland State Bar Association has enlisted the services of two of the full-time faculty in preparing the Maryland annotations for various of the American Law Institute Restatements of the Law. The great importance of this work to Maryland lawyers and judges is such as to make it a source of some pride that this School has been called upon to perform it. Professor A. James Casner has been engaged for two years in preparing the annotations to the Restatement of Agency and his manuscript is expected to be ready for submission to the American Law Institute Editorial Board for publication during the present year. Professor G. Kenneth Reiblich for the past year has been similarly engaged in annotating the Restatement of the Conflict of Laws for Maryland. In the very laborious and arduous task of collecting the material for this work, both Professor Casner and Professor Reiblich have been assisted by students and recent graduates of this School.

The following publications by members of the faculty have appeared during the past biennium:

James T. Carter:—

- Tax Saving vs. Tax Evasion, in 20 Virginia Law Review, 307.
- Gold Currency Legislation and the Gold Clause in Contracts, in Trust Companies Magazine, June-July, 1934, and the Baltimore Daily Record, November 23, 1934.

A. James Casner:—

- Review of May, Divorce Law in Maryland, in 27 Illinois Law Review, 465.
- Review of Marshall and May, The Divorce Court, Vol. 1, Maryland, in 27 Illinois Law Review, 843.
- Review of Marshall and May, The Divorce Court. Vol. II, Ohio, in 29 Illinois Law Review, 204.
- Review of Powell, Cases and Materials on Possessory Estates, in 82 Pennsylvania Law Review, 558.

John S. Strahorn, Jr.:—

Index of Maryland Statutes and Cases on Criminal Law, pp. 44.

Note on Maryland Legislation, in 24 Journal of the American Institute of Criminal Law and Criminology, 1127.

Extra-Legal Materials and the Law of Evidence, in 29 Illinois Law Review, 300.

It is felt that the School, as at present organized, compares favorably, in the quality of instruction offered and in its student product, with the best Class A law schools. Its greatest need is to be assured sufficient maintenance appropriations, so that the faculty organization which has been built up over the past four years may be maintained intact and so that certain additional courses hereinbefore mentioned may be added to its curriculum. A recent report of a joint committee of the American Bar Association, the Association of American Law Schools, and the American Law Institute, said in part as to the principles that should govern law-school instruction:

"A law school which seeks merely to give a knowledge of law as it is fails to perform an important function. * * * The object should be, not only to familiarize the student with the existing law and practice, but also to arouse his interest in remolding the law to meet modern conditions and in improving methods of practice."

No clearer statement of the aims and purposes of this School could be given.

School of Dentistry

J. BEN ROBINSON, D.D.S., *Dean.*

DESPITE the trying economic condition through which we are passing, the School of Dentistry has enjoyed a successful period for the biennium just ended. There has been a marked decline in the enrollment for 1933-34, which may be expected to continue if we accept as significant the decline in enrollment in dental schools throughout the United States.

All available measurements or signs of progress would indicate an improvement in the quality of instruction rendered by the School of Dentistry. Mortality before state boards has decreased, while the report of the National Board of Dental Examiners has been most flattering. All those from the Dental School registered for the National Board examinations earned higher averages than in the corresponding subjects in their collegiate course, while an applicant from Maryland achieved the highest average in the combined Parts I and II of these

examinations. These results can be attributed to two factors: first, the continuation of the policy adopted some years ago of denying admission to those not showing high scholastic attainments in their secondary school and preliminary collegiate education; second, the gradual improvement in instruction due to a broader experience of the individual instructors and advanced improvement in methods of instruction.

The Dental School has clearly outgrown its present physical facilities and is badly in need of additional space. This situation has been created by the necessity for expansion of a number of courses whose value to health service has become better understood. Greater emphasis on these subjects is required for adequate dental training. Expansion of physical facilities is necessary to meet the increased growth in these departments. These deficiencies in physical facilities have been called to the attention of the Board of Regents which has considered them. It is hoped the Board will soon be in a position to recommend an appropriation for additional space and equipment.

The School of Dentistry has continued to operate on the 1-4 plan, the minimum requirement approved by the Dental Educational Council of America. This plan has not been changed because of the belief that quality instruction under the present plan will produce an agent competent to render an adequate oral health service. At the same time economic conditions do not warrant advancing present standards to the point where they will materially increase the cost of oral health service production and by so doing further complicate the difficulties now existing between the production and distribution of health service which all now recognize as a serious social problem. Despite the conservative attitude taken by the School of Dentistry, recent developments indicate the necessity for a change to a higher pre-dental level. Following a study of dental curriculums by the American Association of Dental Schools, a report made by the Curriculum Committee to the A. A. D. S. recommended that dental educators approve the 2-4 plan. While the action of the Association of Dental Schools is not regarded as mandatory, it is quite apparent that all dental schools must conform their plan of education to this recommendation. The School of Dentistry will announce, in its next Annual Bulletin, a change to the 2-4 plan.

The growing need for a closer cooperation between medical and dental teaching has been recognized by both medicine and dentistry and others who are interested in promoting the quality of health service. From time to time the statement has been made that dental teaching is deficient in respect to hospital training and the experience which dental students should have with the sick. Efforts have been made to correct this deficiency and at the same time to improve the services which medicine renders by supplementing the latter with a

competent oral health service. To this end the Schools of Dentistry and Medicine arranged a dental service in the University Hospital which not only improves instruction to dental and medical students, but provides a much needed dental service available to the medical and surgery services in the Hospital. The new University Hospital has equipped a splendid dental unit which is becoming more and more useful. It is a long step forward in coordinating instruction in the two schools.

School of Pharmacy

A. G. DeMEZ, PH.D., *Dean.*

THE biennium which ended September 30th, 1934, was one of unusual significance to the School of Pharmacy. In fact, it marks the beginning of a new epoch in pharmaceutical education in this country. Beginning with the fall of 1932 all of the member schools and colleges of the American Association of Colleges of Pharmacy that had not already done so raised the requirements for graduation to the satisfactory completion of a minimum of four years of college work, and thus the standards set for pharmaceutical education were placed on a parity with those established by other collegiate departments. For those schools and colleges that had been giving only three years of work previous to this time, the task of adapting themselves to the new order was, no doubt, difficult. The School of Pharmacy of the University of Maryland was fortunate in this respect as it was already giving a fourth year of instruction for the benefit of those students who desired to pursue work leading to the Bachelor's degree. Despite this advantage, however, the change from a minimum course of three years to one of four years was not effected without considerable study and planning by both the administrative officers and faculty, and there still remain some problems for which a solution must be found in the not far distant future. To begin with, it was necessary to revise our curriculum to meet the new requirements as set forth in the Pharmaceutical Syllabus, the fourth revised edition of which was published in the latter part of 1932. This in turn made necessary changes in courses and in some instances a reorganization of the teaching staff. These tasks have been accomplished in so far as the first three years of the new course are concerned, but we are still faced with the problem of securing the additional laboratory and class-room space required to properly give some of the work of the fourth year, and it may become necessary to make some new additions to the teaching staff to avoid overloading.

One of the effects of the change from a three-year course to a four-year course has been to reduce the number of entering students. It is impossible to state at this time to what extent the lengthening of the course is responsible for the reduction in enrollment because the change was made at about the time the present depression in business reached its lowest level in this locality, from which most of our students are drawn. The enrollment for the past three years was as follows:

| Class | 1932-33 | 1933-34 | 1934-35 |
|-------------------|---------|---------|---------|
| First Year | 118 | 101 | 96 |
| Second Year | 119 | 86 | 77 |
| Third Year | 78 | 103 | 72 |
| Fourth Year | 14 | 12 | 14 |
| Graduate | 25 | 18 | 18 |
| Special | 5 | 6 | 5 |
| Total..... | 359 | 326 | 282 |

The above table shows that for the three-year period the drop in enrollment amounted to approximately 22%. It is anticipated that this will be made up in greater part when the fourth year of work is given next year as the enrollment for 1934-35 is principally in the classes of the first three years of the course. So far as the School is concerned, this condition is not undesirable. As a matter of fact, Pharmacy, like the other professions, finds it difficult at present to absorb the new additions to its ranks and a still further reduction in enrollment would not be unwelcome if some satisfactory way could be found to make up the loss in income which would result from a reduction in the amount of student fees collected.

There has been no increase in the size of the faculty since the last report was made, although a number of new appointments have been made to fill vacancies due to resignations and other causes. Information relative to the changes made in the faculty from year to year may be had by consulting the annual catalog of the School.

At the beginning of the biennium the School of Pharmacy had occupied its new quarters for only two years, and it was necessary to purchase a considerable amount of laboratory and class-room equipment to provide the facilities for proper instruction in the different courses given. It was also necessary to build up the library to provide the journals and reference books required for teaching purposes and in the pursuit of pharmaceutical research. Some five or six hundred volumes were added during the biennium, and our library now contains all of the most important domestic and foreign periodicals and reference works in pharmacy. There is still need to complete certain series of some of the older foreign pharmaceutical journals and to obtain certain reference works in the allied sciences to make our library a complete working unit.

Rapid advances have been made in the School in the development of research. Before the occupancy of its present quarters, there were practically no facilities for doing research and what little was done was carried out under conditions which were most unsatisfactory. At the close of the biennium just ended, research was being carried on in practically all of the departments of the School, and work was of such a high standard that it has been accepted without question by the Graduate School of the University in the partial fulfillment of requirements for higher degrees, and much of it has been accepted for publication in the pharmaceutical and other scientific journals. The number of graduate students enrolled has dropped from 25 in 1933 to 18 in 1934, due largely, no doubt, to the depression and to the poor outlook for employment in the professions in the immediate future. In addition to the research work carried on by the members of our teaching staff and the graduate students, several of the former have been actively engaged in the work of revising the official drug standards of this country, namely, the Pharmacopoeia of the United States and the National Formulary. One of the members of our staff is Vice-Chairman of the Committee of Revision of the Pharmacopoeia, and another is a member of the Committee of Revision of the National Formulary. Several other members of the teaching staff are auxiliary members of these committees.

The practice of detailing students to work in the dispensaries of the various hospitals in the City of Baltimore has been continued. In addition, members of the teaching staff have been assigned at different times to assist with the work in the dispensary of the University Hospital. During the summer of 1934 a member of the teaching staff was placed on regular duty in the Hospital Dispensary, and beginning with the first of October, 1934, all of the work of the Hospital Dispensary was taken over by the School. With the beginning of next year, it is expected that the School will also take over the operation of the drug room in the new University Hospital building. Plans have been made to relocate the dispensing room in the old Hospital Dispensary and to provide additional quarters for carrying on certain manufacturing operations which will make it possible for the School to use the plant as a teaching unit for students desiring to specialize in work of this kind. It is believed that the arrangement will be beneficial to both the Hospital and the School of Pharmacy. The School has also continued to cooperate with the Board of Pharmacy. Three times each year the Board has made use of certain class-rooms and laboratories of the School for holding its examinations to determine the fitness of candidates for registration to practice Pharmacy in the State.

On the whole, the progress made by the School during the biennium has been most satisfactory. It has adapted itself to the changes which were necessary with a minimum of disturbance of the work of instruction and the latter is now so well organized that the teaching staff

should have more time for research and for devising ways and means to improve the work of instruction in the future. The most serious problem confronting the School at this time is the necessity for securing adequate class-room and laboratory space for the work of the fourth year of the new course which will be given for the first time beginning next fall. A detailed report on the needs of the School in this respect has been furnished, and it is hoped that some satisfactory arrangement can be made. If not, the faculty will be seriously handicapped in its efforts to meet the new requirements, and it is doubtful if the present standards for instruction can be maintained. All of our laboratories are operating to capacity at the present time and it will not be possible to schedule the additional classes in the lecture-rooms and class-rooms now available.

Report of Dean of Women

ADELE H. STAMP, M.A., *Dean.*

THE enrollment of women students at the University of Maryland has shown a steady increase with 493 women in 1933-34 and 504 in 1934-35. Whereas this has meant increased responsibilities, especially as far as housing facilities are concerned, with no increase in staff, it has also meant increased opportunities. The chief problem that confronts us in connection with women students is that of living quarters. It is hoped that the fall of 1935 will see the completion of the second dormitory, which is badly needed. At the present time the women are housed in Margaret Brent Hall, which accommodates 119, five national sorority houses, which are adjacent to the campus, and eighteen off-campus houses. Placing the girls in off-campus houses is very unsatisfactory. They do not have proper supervision and, since they get their meals whenever and wherever they wish, they very often have improper and insufficient food and eat very irregularly. It is true that houses must be approved by the office of the Dean of Women before the students are sent there, and the house mother agrees to enforce the University rules and regulations; however, with girls living several miles from the campus it is impossible to keep an accurate check on the social life and health of the women students in the eighteen houses. By actual count twenty-two girls did not come to Maryland because their parents would not send them where they could not live in the dormitory. There are already seven on the waiting list for dormitory rooms for second semester and as yet no vacancies.

Since the last biennium two honor societies have come to our campus: Alpha Lambda Delta and Mortar Board. Alpha Lambda Delta is a Freshman honor society and election to it is based entirely on scholarship. Mortar Board, the only national Senior honor society for women, is based on scholarship, leadership and service. The Women's Senior Honor Society has had this goal since its beginning in 1925, and the members' efforts culminated this fall in the installation, which was attended by many of the alumnae. Members of the Junior Class are elected to Mortar Board, prior to commencement, by the out-going Senior members. Its worthy purposes and high ideals are increasing forces for good on the campus, and it is now recognized as the highest honor for women.

The Women's League has proved itself an effective and competent body in handling the problems that arise in connection with student life. The scope of the work of this group includes the dormitory, the five sorority houses and the eighteen off-campus houses. In addition, the day students have their representatives.

History indeed was made last year when Mrs. John L. Whitehurst was appointed to the Board of Regents, the first woman to be thus honored. The Governor could not have made a happier choice, and we are indeed fortunate in having her. She has already shown her deep interest in the University and there is no doubt even greater progress for women will be made under her skillful guidance.

With the increasing number of women students the need for a building to house women's activities becomes acute. This building would contain meeting rooms for women's organizations, chapter rooms for sororities, ample recreation and reading rooms, a dining room for women students, and a few bed rooms available for parents, visiting alumnae and day students who must remain on campus in emergencies. At the present time there is no comfortable place for returning alumnae and parents to stay nearer than Washington, and accommodations of this kind are a necessity. These accommodations would be available for visiting debating teams, etc. Such an arrangement would also attract to the campus more meetings and conferences of county and State-wide organizations of women's clubs. This building would draw *every* woman student in college to it for one thing or another and would be a meeting place where day students and campus students would become better acquainted. Under present conditions the day students go to the three different rest rooms in their off hours and the campus students go to their own rooms, and there is no opportunity for the mingling of the different groups. The day students are a distinct group, the dormitory girls another, and each sorority another. A central building where all the girls would be drawn would mix these groups, broaden the girls' acquaintances and friendships, arouse more interest in campus activities and make for greater democracy among the women students.

Department of Physical Education for Women

ADELE H. STAMP, M.A., *Dean of Women.*

THE Dean of Women has supervision of the work of the Department of Physical Education for Women.

It is very gratifying to report that the hockey field requested in the last biennium was completed this fall and has been in constant use. At the present time we have a women's field house, some excellent tennis courts, and the hockey field. When the athletic field is finished with suitable walks, drainage, etc., we will have a modern, complete and efficient plant for women.

There has been a steady increase in the growth of the department. In 1933-34 a major in Physical Educational for Women was offered to meet the need for teachers of physical education in the State of Maryland.

A program of intra-mural sports is carried on, which includes hockey, tennis, basketball, volleyball, archery, and rifle. This year pistol shooting has been added. The rifle team continues to be nationally known for its record. The program of intra-mural sports is supplemented by natural dancing, folk dancing, and stunts.

After a lapse of several years another play day was held at the University of Maryland. Three schools were invited as guests, American University, Marjorie Webster and Western Maryland. The hockey games which were played aroused a great deal of enthusiasm and were enjoyed by the participants and interested spectators.

The annual May Day continues to draw many people from all over the State to see the original and colorful pageant which is given here. In 1933-34 a colonial May Day was given in celebration of the tercentenary. This was one of the most beautiful that has ever been presented.

The Women's Athletic Association, whose aim is to promote intra-mural sports and interest in athletics among all women students, has shown a marked increase with the additional students. The work of this organization has been very satisfactory.

Two courses in Hygiene are given to the Freshman and Sophomore women students by the woman physician who is here two half-days a week. A complete physical examination is given each girl once a year by the woman physician. In the event of remedial defects, such as diseased tonsils, teeth, and problems of malnutrition and undernourishment, the students report to the woman physician for check-ups and further advice. Corrective work is given by the Department of Physical Education to those who are unable to take the routine work because of health defects.

The outstanding need of this department is a part-time woman physician for four half-days a week. She would perform the following duties: (1) Be the medical examiner and health adviser of all the women students, (2) Be available for consultation at the University four times a week, (3) Teach Hygiene, (4) Teach First Aid, (5) Teach an advanced course in Physiology.

The Library

GRACE BARNES, *Librarian.*

Use of the Library

STUDENTS are using the Library increasingly, as shown by a survey conducted by the Reference and Loan Department on typical days in October and November, 1934. The extent of the increase is indicated by the daily average of visits, 1,461, as against 1,130 two years ago. Through the tabulated results of this survey interesting and helpful information was obtained as to heaviest hours and days of service, classes of books most in use, and classes of students using the most books. It is gratifying to find that 93 per cent of those who filled out the question blanks stated that they were supplied with the material they sought, and that 400 out of 488 had a good opinion of service usually received at the Library, and 83 of the remaining 88 a fair opinion.

Circulation of books and periodicals, including those "on reserve" and not taken out of the Library, was 57,341 in 1932-33 and 64,574 in 1933-34, making a total of 121,915. This is an increase of about 28 per cent over the preceding biennium. In addition, 300 loans were made from the reading room in the chemistry department in 1932-33 and 220 in 1933-34.

The Library borrowed from other libraries 82 volumes in 1932-33 and 86 in 1933-34, a total of 168, being an increase of 67 over the previous biennium. Volumes loaned to other libraries were 3 in 1932-33 and 3 in 1933-34.

Books in the Library.

By purchase, gift, and binding of periodicals, 6,211 volumes were added during the biennium, bringing the total of books on the campus to about 51,500 volumes.

The Library received about 484 serials, 418 of which were by subscription.

Gifts from private sources included: 270 books and pamphlets from the library of the late Dr. J. C. Hemmeter of Baltimore; 294 books, besides many bulletins, and his collection of papers pertaining to the Maryland Farmers' Institute, from the library of the late William Lee Amoss of Benson, Maryland; 20 agricultural books presented by Miss Marie Wanner of Baltimore; 18 volumes given by Mr. George W. Kable of Hyattsville; 182 books given by Mr. J. G. Schulz; subscriptions to Better Verse and Wings, by Dr. Homer C. House. One hundred and thirty-one books were transferred from the library of the Medical School.

Statistics of Cataloging and Recording

| Year | New Volumes | Cards for Catalog | Cards for Shelf List |
|-------------------------|----------------|----------------------|-------------------------|
| 1932-33..... | 3,794 | 10,148 | 1,668 |
| 1933-34..... | 5,053 | 8,574 | 1,504 |
| Recataloged: | | | |
| 1932-33..... | 750 | 1,229 | 343 |
| 1933-34..... | 618 | 1,318 | 322 |
| Total for biennium..... | 10,215 | 21,269 | 3,837 |

Two thousand four hundred and thirty-three cross reference cards were added to the catalog in 1933-34. The catalog department has exceeded its work of the preceding biennium by 3,726 volumes and 7,407 cards.

In the spring of 1934 nine students were employed for a total of 707 hours, under Federal Emergency Relief Administration. They did a large amount of inventorying and listing books in department libraries, labeling and marking books, reading shelves, arranging documents and checking bibliographies.

Instruction to Freshmen

A one-semester course on the use of reference books and the card catalog is taught by the Librarian and the Reference and Loan Librarian.

| | |
|-----------------------------------|-----|
| Students enrolled in 1932-33..... | 270 |
| Students enrolled in 1933-34..... | 272 |
| Total..... | 542 |

Seventy-one more students were taught during this biennium than during the previous one.

Needs of the Library

A cut this year of 40 per cent in the Library budget for books, periodical subscriptions, binding, supplies, etc., and about the same cut last year puts the purchase of new books at a figure almost negligible for a university library. Some important periodicals have been cancelled from our list. The obvious need of undergraduate and graduate students and members of the faculty for the best of the new books and periodicals as they appear, as well as for many older works, points to the great importance of increasing materially the purchasing power of the Library. The necessity for this is the more urgent because we have fewer volumes than almost all other libraries of our class.

Shelves in the book stacks are so crowded that there is immediate need for an addition. This can be obtained by placing stacks for about 10,000 books on the mezzanine floor. It will cost several thousand dollars.

A second built-in 70-tray card catalog unit will be a necessity before the next biennium has passed. There is a demand for a display case for exhibition of interesting books and other material. Each of these pieces of equipment will cost several hundred dollars.

There should be an assistant in the Reference and Loan Department in order to have a member of the staff in charge at the reference desk in the evenings and to assist at the loan desk during some of the day-time hours.

Registrar's Report

(COLLEGE PARK)

ALMA H. PREINKERT, *Assistant Registrar*.

TABLES giving information concerning the enrollment of students, the instructional staff and departmental instructional load, the degrees conferred and certificates awarded, and scholastic averages for certain groups of students during the biennium, 1932-34, are shown on the following pages. Preliminary enrollment figures for 1934-35 are included; these figures are not complete, since there will be additional registrations at the beginning of the second semester. Enrollment for certain short courses, which will be offered later this year, has been estimated so that a comparable total figure for 1934-35 might be obtained.

A table is included showing the enrollment at College Park of resident students carrying regular courses for the period since the institution became the University of Maryland. It will be noted that the enrollment for 1934-35 again shows an upward trend. The first decrease in student enrollment occurred in 1933-34. This year the enrollment figures will very nearly approach the peak year of 1932-33.

Enrollment at College Park of Resident Students carrying Regular Courses for the period since the Institution became the University of Maryland.

| | Regular Academic Year | Summer School | Total |
|--------------|--------------------------|------------------|--------|
| 1920-21..... | 522 | 208 | 730 |
| 1921-22..... | 701 | 380 | 1,081 |
| 1922-23..... | 885 | 446 | 1,331 |
| 1923-24..... | 960 | 452 | 1,412 |
| 1924-25..... | 978 | 486 | 1,464 |
| 1925-26..... | 1,064 | 454 | 1,518 |
| 1926-27..... | 1,139 | 477 | 1,616 |
| 1927-28..... | 1,194 | 572 | 1,766 |
| 1928-29..... | 1,287 | 626 | 1,913 |
| 1929-30..... | 1,410 | 721 | 2,131 |
| 1930-31..... | 1,571 | 745 | 2,316 |
| 1931-32..... | 1,871 | 927 | 2,798 |
| 1932-33..... | 2,000 | 1,033 | 3,033 |
| 1933-34..... | 1,914 | 840 | 2,754 |
| 1934-35..... | *1,878 | 1,016 | *2,894 |

* Figures for 1934-35 are not complete, second semester registration not being included.

ENROLLMENT OF STUDENTS AT COLLEGE PARK

Resident Collegiate Courses:

| Academic Year | 1932-1933 | | | 1933-1934 | | | *1934-1935 | | |
|---|-----------|-------|-------|---------------|-------|-------|---------------|-------|-------|
| | Men | Women | Total | Men | Women | Total | Men | Women | Total |
| College of Agriculture..... | 191 | 9 | 200 | 162 | 10 | 172 | 172 | 12 | 184 |
| College of Arts and Sciences..... | 631 | 162 | 793 | 686 | 179 | 865 | 667 | 165 | 832 |
| College of Education..... | 95 | 132 | 227 | 84 | 146 | 230 | 87 | 177 | 264 |
| College of Engineering..... | 411 | ... | 411 | 331 | ... | 331 | 303 | ... | 303 |
| College of Home Economics..... | ... | 114 | 114 | ... | 117 | 117 | ... | 121 | 121 |
| Graduate School | 196 | 59 | 255 | 158 | 41 | 199 | 145 | 29 | 174 |
| Total Academic Year..... | 1,524 | 476 | 2,000 | 1,421 | 493 | 1,914 | 1,374 | 504 | 1,878 |
| Summer School | 406 | 627 | 1,033 | 389 | 451 | 840 | 408 | 608 | 1,016 |
| Total Resident Collegiate, Less Duplicates | 1,752 | 1,054 | 2,806 | 1,650 | 902 | 2,552 | 1,605 | 1,034 | 2,639 |
| Extension Courses: | | | | | | | | | |
| College of Education..... | 162 | 38 | 200 | 120 | 108 | 228 | 126 | 89 | 215 |
| College of Engineering..... | 520 | ... | 520 | 217 | ... | 217 | 230 | ... | 230 |
| Total Resident and Extension, Less Duplications | 2,420 | 1,090 | 3,510 | 1,970 | 1,009 | 2,979 | 1,948 | 1,117 | 3,065 |
| Short Courses: | | | | | | | | | |
| Rural Women | ... | 414 | 414 | ... | 671 | 671 | ... | †671 | †671 |
| Boys' and Girls' Club..... | 132 | 252 | 384 | 70 | 174 | 244 | 103 | 226 | 329 |
| Volunteer Firemen | 90 | ... | 90 | 77 | ... | 77 | 230 | ... | 230 |
| Canners | 110 | ... | 110 | (Not Offered) | | | (Not Offered) | | |
| Florists | 202 | 23 | 225 | 63 | 5 | 68 | †63 | †5 | †68 |
| Garden School | 39 | 142 | 181 | 12 | 188 | 200 | †12 | †188 | †200 |
| Nurserymen | 83 | 5 | 88 | 51 | 2 | 53 | †51 | †2 | †53 |
| Practice School (Summer School)..... | 26 | 12 | 38 | 18 | 20 | 38 | (Not Offered) | | |
| Total Short Courses..... | 682 | 848 | 1,530 | 291 | 1,060 | 1,351 | 459 | 1,092 | 1,551 |
| Grand Total All Courses, Less Duplicates. | 3,102 | 1,938 | 5,040 | 2,261 | 2,069 | 4,330 | 2,407 | 2,209 | 4,616 |

* Figures for 1934-1935 are not complete; second semester registrations not included.
† Estimated.

GEOGRAPHICAL DISTRIBUTION OF STUDENTS

Resident Students Registered at College Park During the Regular Academic Year
By States and Foreign Countries

| | 1932-33 | 1933-34 | 1934-35* | | 1932-33 | 1933-34 | 1934-35* |
|----------------------------|---------|---------|----------|-------------------------|---------|---------|----------|
| Alabama..... | 2 | 1 | .... | Nebraska..... | 2 | 3 | 2 |
| Arkansas..... | .... | 1 | .... | New Jersey..... | 38 | 40 | 36 |
| California..... | 1 | 1 | 2 | New York..... | 39 | 53 | 55 |
| Colorado..... | 1 | 1 | .... | North Carolina..... | 3 | 2 | 3 |
| Connecticut..... | 7 | 6 | 9 | Ohio..... | 2 | 3 | 5 |
| Delaware..... | 9 | 6 | 6 | Oklahoma..... | .... | .... | 1 |
| District of Columbia†..... | 652 | 545 | 506 | Pennsylvania..... | 24 | 17 | 22 |
| Florida..... | 2 | 2 | 3 | Rhode Island..... | 1 | 1 | 1 |
| Georgia..... | .... | 1 | .... | South Carolina..... | 3 | .... | .... |
| Idaho..... | 1 | .... | .... | South Dakota..... | 1 | 1 | .... |
| Illinois..... | 3 | 2 | .... | Texas..... | 1 | .... | 2 |
| Indiana..... | 4 | 2 | 1 | Utah..... | 1 | 1 | .... |
| Iowa..... | 2 | 1 | .... | Vermont..... | 1 | .... | .... |
| Kentucky..... | .... | .... | 1 | Virginia..... | 22 | 14 | 10 |
| Louisiana..... | .... | 1 | .... | Washington..... | 3 | 1 | 1 |
| Maine..... | 2 | 2 | .... | West Virginia..... | 3 | 4 | 4 |
| Maryland..... | 1,155 | 1,193 | 1,202 | Canal Zone..... | .... | 1 | .... |
| Massachusetts..... | 5 | 2 | .... | Puerto Rico..... | 1 | 2 | .... |
| Michigan..... | 2 | 2 | 2 | Philippine Islands..... | 1 | .... | .... |
| Minnesota..... | 2 | .... | .... | British Columbia..... | 1 | .... | .... |
| Mississippi..... | 1 | .... | .... | China..... | 1 | 1 | .... |
| Missouri..... | 1 | 1 | 1 | Columbia..... | .... | .... | 1 |
| Montana..... | 1 | .... | 1 | Totals..... | 2,000 | 1,914 | *1,878 |

* Figures for 1934-1935 are not complete; second semester registration not included.

† Number paying taxes in Maryland not known.

UNDERGRADUATE SCHOLASTIC AVERAGES AT COLLEGE PARK

| | 1930-31 | 1931-32 | 1932-33 | 1933-34 |
|------------------------------|---------|---------|---------|---------|
| Men. | 2.13 | 2.07 | 2.13 | 2.17 |
| Women. | 2.59 | 2.58 | 2.47 | 2.43 |
| All Students | 2.24 | 2.19 | 2.22 | 2.24 |
| Fraternity Men | 2.20 | 2.15 | 2.17 | 2.18 |
| Non-Fraternity Men | 2.07 | 2.02 | 2.11 | 2.16 |
| Sorority Women | 2.76 | 2.79 | 2.76 | 2.66 |
| Non-Sorority Women | 2.39 | 2.36 | 2.24 | 2.28 |
| Freshman Men | 1.87 | 1.83 | 1.93 | 1.89 |
| Freshman Women | 2.30 | 2.24 | 2.10 | 2.15 |
| All Freshmen | 1.96 | 1.91 | 1.97 | 1.97 |

Key:

| | |
|-------------------|------|
| A | 4.00 |
| B | 3.00 |
| C | 2.00 |
| D | 1.00 |
| E and F | 0.00 |

DEGREES AND CERTIFICATES CONFERRED AT COLLEGE PARK

| | 1932-33 | | | | 1933-34 | | | | Total for Biennium | | |
|---|---------|-------|-------|--|---------|-------|-------|--|--------------------|-------|-------|
| | Men | Women | Total | | Men | Women | Total | | Men | Women | Total |
| Honorary Degrees: | | | | | | | | | | | |
| Doctor of Agriculture..... | 1 | .. | 1 | | .. | .. | .. | | 1 | .. | 1 |
| Doctor of Divinity..... | 1 | .. | 1 | | .. | .. | .. | | 1 | .. | 1 |
| Doctor of Laws..... | 1 | .. | 1 | | .. | .. | .. | | 1 | .. | 1 |
| Doctor of Letters..... | .. | .. | .. | | 1 | .. | 1 | | 1 | .. | 1 |
| Total Honorary Degrees..... | 3 | .. | 3 | | 1 | .. | 1 | | 4 | .. | 4 |
| Advanced Degrees: | | | | | | | | | | | |
| Graduate School: | | | | | | | | | | | |
| Doctor of Philosophy..... | 9 | 1 | 10 | | 14 | 1 | 15 | | 23 | 2 | 25 |
| Master of Arts..... | 19 | 10 | 29 | | 10 | 10 | 20 | | 29 | 20 | 49 |
| Master of Science..... | 30 | 6 | 36 | | 18 | 6 | 24 | | 48 | 12 | 60 |
| College of Engineering: | | | | | | | | | | | |
| Civil Engineer | 6 | .. | 6 | | 3 | .. | 3 | | 9 | .. | 9 |
| Electrical Engineer | 3 | .. | 3 | | 2 | .. | 2 | | 5 | .. | 5 |
| Mechanical Engineer | 1 | .. | 1 | | 1 | .. | 1 | | 2 | .. | 2 |
| Total Advanced Degrees.... | 68 | 17 | 85 | | 48 | 17 | 65 | | 116 | 34 | 150 |
| Bachelors' Degrees: | | | | | | | | | | | |
| College of Agriculture: | | | | | | | | | | | |
| Bachelor of Science..... | 35 | .. | 35 | | 27 | 2 | 29 | | 62 | 2 | 64 |
| College of Arts & Sciences: | | | | | | | | | | | |
| Bachelor of Arts..... | 41 | 13 | 54 | | 37 | 17 | 54 | | 78 | 30 | 108 |
| Bachelor of Science..... | 35 | 3 | 38 | | 37 | 8 | 45 | | 72 | 11 | 83 |
| College of Education: | | | | | | | | | | | |
| Bachelor of Arts..... | 3 | 21 | 24 | | 9 | 14 | 23 | | 12 | 35 | 47 |
| Bachelor of Science..... | 22 | 11 | 33 | | 21 | 15 | 36 | | 43 | 26 | 69 |
| College of Engineering: | | | | | | | | | | | |
| Bachelor of Science..... | 50 | .. | 50 | | 53 | .. | 53 | | 103 | .. | 103 |
| College of Home Economics: | | | | | | | | | | | |
| Bachelor of Science..... | .. | 19 | 19 | | .. | 24 | 24 | | .. | 43 | 43 |
| Total Bachelors' Degrees.... | 186 | 67 | 253 | | 184 | 80 | 264 | | 370 | 147 | 517 |
| Total All Degrees..... | 257 | 84 | 341 | | 233 | 97 | 330 | | 490 | 181 | 671 |
| Certificates & Diplomas: | | | | | | | | | | | |
| Honorary Certificate of Merit.... | 3 | .. | 3 | | 3 | .. | 3 | | 6 | .. | 6 |
| Teachers' Diplomas | 22 | 50 | 72 | | 17 | 39 | 56 | | 39 | 89 | 128 |
| Certificates in Industrial Education..... | 7 | .. | 7 | | 3 | .. | 3 | | 10 | .. | 10 |
| Total Certificates | 32 | 50 | 82 | | 23 | 39 | 62 | | 55 | 89 | 144 |
| Grand Total—Degrees and Certificates..... | 289 | 134 | 423 | | 256 | 136 | 392 | | 545 | 270 | 815 |

MEMBERS OF STAFF ENGAGED IN INSTRUCTION AT COLLEGE PARK

1932-1933

| | Agric- ulture | Arts and Sciences | Education | Engi- neering | Home Economics | Physical Edu- cation | Military | Summer School Specials | Extension | | Total Less Duplication |
|--------------------------------|------------------|----------------------|-----------|------------------|-------------------|----------------------------|----------|------------------------------|-----------|-------|------------------------------|
| | | | | | | | | | Edu. | Engr. | |
| Professors, | 17 | 16 | 6 | 4 | 1 | 2 | 1 | .. | 1 | .. | 47 |
| Lecturers, | 7 | 1 | .. | 1 | .. | .. | .. | .. | .. | .. | 9 |
| Associate Professors | 8 | 6 | .. | 2 | 1 | .. | .. | .. | .. | .. | 17 |
| Assistant Professors | 5 | 11 | 1 | 3 | 1 | 1 | 3 | .. | .. | .. | 25 |
| Associate, | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 |
| Instructors, | 2 | 10 | 4 | .. | 2 | 1 | .. | 27 | 14 | 1 | 60 |
| Assistants, | 5 | 10 | 2 | 1 | .. | .. | .. | .. | .. | .. | 18 |
| Graduate Assistants, | 5 | 13 | .. | .. | .. | .. | .. | .. | .. | .. | 18 |
| Fellows, | 6 | 7 | .. | .. | 1 | .. | .. | .. | .. | .. | 14 |
| Student Assistants | 1 | .. | .. | 7 | .. | 1 | .. | .. | .. | .. | 9 |
| | — | — | — | — | — | — | — | — | — | — | — |
| | 57 | 74 | 13 | 18 | 6 | 5 | 4 | 27 | 15 | 1 | 218 |

1933-1934

| | Agric- ulture | Arts and Sciences | Education | Engi- neering | Home Economics | Physical Edu- cation | Military | Summer School Specials | Extension | | Total Less Duplication |
|--------------------------------|------------------|----------------------|-----------|------------------|-------------------|----------------------------|----------|------------------------------|-----------|-------|------------------------------|
| | | | | | | | | | Edu. | Engr. | |
| Professors, | 15 | 15 | 6 | 4 | 1 | 2 | 1 | .. | 1 | .. | 44 |
| Lecturers, | 4 | 1 | .. | 1 | .. | .. | .. | .. | .. | .. | 6 |
| Associate Professors | 7 | 6 | .. | 2 | 1 | .. | .. | .. | .. | .. | 16 |
| Assistant Professors | 6 | 12 | 1 | 4 | 1 | .. | 3 | .. | .. | .. | 27 |
| Instructors, | 2 | 10 | 4 | .. | 2 | 1 | .. | 27 | 15 | 1 | 61 |
| Assistants, | 5 | 10 | 1 | 1 | .. | .. | .. | .. | 1 | .. | 18 |
| Graduate Assistants, | 3 | 13 | .. | .. | .. | .. | .. | .. | .. | .. | 16 |
| Fellows, | 4 | 6 | .. | .. | 1 | .. | .. | .. | .. | .. | 11 |
| Miscellaneous, | 1 | 2 | .. | .. | .. | .. | .. | .. | .. | .. | 3 |
| Student Assistants | .. | .. | .. | 6 | .. | 3 | .. | .. | .. | .. | 9 |
| | — | — | — | — | — | — | — | — | — | — | — |
| | 47 | 75 | 12 | 18 | 6 | 6 | 4 | 27 | 17 | 1 | 211 |

STUDENT CREDIT HOURS OF INSTRUCTION BY DEPARTMENTS

| Department | 1931-32 | 1932-33 | 1933-34 |
|------------------------------|---------|---------|---------|
| Agricultural Economics | 355 | 362 | 460 |
| Agricultural Education | 238 | 204 | 111 |
| Agronomy | 347 | 430 | 400 |
| Animal Husbandry | 254 | 245 | 180 |
| Astronomy | 33 | .... | .... |
| Bacteriology | 700 | 1,094 | 1,316 |
| Botany | 1,552 | 1,705 | 1,688 |
| Chemistry | 6,116 | 6,548 | 5,774 |
| Dairy Husbandry | 256 | 170 | 152 |
| Economics | 4,511 | 4,623 | 4,858 |
| Education | 1,588 | 2,215 | 1,961 |
| Physical Education (Men).... | 506 | 594 | 504 |
| Physical Education (Women) . | 678 | 876 | 841 |
| Engineering | 4,089 | 4,747 | 4,586 |
| English | 6,136 | 6,651 | 6,462 |
| Entomology | 663 | 552 | 498 |
| Farm Management | 98 | 146 | 63 |
| Farm Mechanics | 148 | 128 | 103 |
| Genetics | 324 | 371 | 344 |
| Geology | 168 | 174 | 201 |
| History | 3,577 | 3,990 | 4,184 |
| Home Economics | 1,605 | 1,693 | 2,005 |
| Home Economics Education.. | 234 | 289 | 284 |
| Horticulture | 466 | 571 | 557 |
| Greek and Latin..... | 108 | 56 | 36 |
| Library Science | 266 | 302 | 252 |
| Mathematics | 4,664 | 4,781 | 3,969 |
| Military | 2,008 | 2,149 | 2,149 |
| Modern Language | 4,477 | 4,593½ | 4,414½ |
| Music | 132 | 131 | 128 |
| Mythology | 61 | 53 | 67 |
| Philosophy | 708 | 438 | 501 |
| Physics | 2,141 | 2,094 | 1,792 |
| Poultry | 72 | 76 | 76 |
| Psychology | 547 | 606 | 583 |
| Public Speaking | 1,850 | 1,949 | 1,730 |
| Zoology | 2,045 | 2,606 | 2,543 |
| Totals..... | 53,721 | 58,212½ | 55,772½ |

Registrar's Report

(BALTIMORE)

W. M. HILLEGEIST, *Registrar.*

THE following data show for the Baltimore Schools (Dentistry, Law, Medicine, Nursing, and Pharmacy)

The Student Enrollment for 1932-33, 1933-34, and the First Semester of 1934-35,

The Geographical Distribution of Students for 1932-33, 1933-34, and the First Semester of 1934-35,

The Officers and Instruction for 1932-33 and 1933-34, and

The Degrees and Certificates Conferred in 1933 and in 1934.

During the past biennium the Baltimore Schools have suffered a net loss of ninety-six students. The gains and losses of the five schools are represented by the following table:

| Gain or Loss in 1933-34 as to 1932-33 | Dentistry | Law | Medicine | Nursing | Pharmacy |
|---|-----------|---------|----------|---------|----------|
| | 54 Loss | 11 Gain | 45 Gain | 13 Gain | 36 Loss |
| Gain or Loss in 1934-35 as to 1933-34 | 25 Loss | 18 Gain | 14 Loss | 5 Loss | 49 Loss |
| Total Change in Biennium | 79 Loss | 29 Gain | 31 Gain | 8 Gain | 85 Loss |

On July 24, 1934, I wrote to the President and reported that Dean Robinson said "That the registration in the schools of dentistry during the past decade had decreased fifty-four per cent." The fact is, though, that if we could have taken residents of New Jersey into the freshman dental class this year, there would have been a smaller loss in the total enrollment as compared in 1933-34. In 1933-34 thirteen freshman students enrolled from New Jersey and eighteen came from that state in 1932-33. (The State of New Jersey will require in 1938 credit for two years of predental study by every candidate for the state dental examination.)

The loss in enrollment in the School of Medicine for 1934-35 is due mainly to the smaller freshman class accepted by Dean Rowland—115 students in 1934-35 and 137 in 1933-34.

The School of Pharmacy shows a loss of eighty-five students during the period reported. Dean DuMez thinks this is due probably to the local effects of the depression. A large part of this decrease should be restored in 1935-36, for at that time the four-year course will have its first senior class.

The uniform and centralized system of permanent records for students is now in effect for the School of Medicine. This was accomplished after the previous biennial report was made to you. In that report mention was made that the system was in operation then for the schools of Dentistry, Law, and Pharmacy.

The system has not been adopted for the School of Nursing. There is such a complexity in the detail of student records for nurses that for the time being it seems preferable to let the office of the superintendent of the School of Nursing continue to handle the permanent records. The office of the registrar uses the same system for the admission of students in nursing, and it keeps the same admission records as is done for the students in the other four professional schools.

As was mentioned in the report for the 1933 Legislature, the office of the registrar needs more floor space. It has been necessary to move the Elliott-Fisher posting machine to the adjacent class room. The room is used for classes not over three or four hours a week. The office of the registrar would like to have that room.

There are only two full-time clerks in the office of the registrar—a senior stenographer and a junior stenographer. Without doubt, there is need for an experienced typist-clerk for at least four hours each day. The present staff has too heavy a load to carry continually. The office of the registrar has never been able to follow the summer schedule of shorter hours—we have the same office hours the year round—and there is not any period of let-up when the clerks can be compensated for the extra hours put in during the summer months. A half-time additional clerk is urgently needed.

STUDENT ENROLLMENT (BALTIMORE SCHOOLS)

| | 1932-33 | | | 1933-34 | | | 1934-35 (First Semester) | | |
|--------------------------|---------|--------|-------|---------|---------|-------|-----------------------------|--------|-------|
| | Total | Men | Women | Total | Men | Women | Total | Men | Women |
| School of Dentistry..... | 431 | 427 | 4 | 377 | 375 | 2 | 352 | 350 | 2 |
| School of Law..... | 188 | 182 | 6 | 199 | 194 | 5 | 217 | 211 | 6 |
| School of Medicine..... | 413 | 406 | 7 | 458 | 450 | 8 | 444 | 432 | 12 |
| School of Nursing..... | 111 | ... | 111 | 124 | ... | 124 | 119 | ... | 119 |
| School of Pharmacy..... | 365 | 342 | 23 | 329 | 303 | 26 | 280 | 259 | 21 |
| Total for Year..... | 1,508 | 1,357 | 151 | 1,487 | 1,322 | 165 | 1,412 | 1,252 | 160 |
| Duplicates, | 2* | 2* | ... | 7‡ | 6‡ | 1‡ | 2‡ | 2‡ | ... |
| Net Total | 1,506† | 1,355† | 151† | 1,480\$ | 1,316\$ | 164\$ | 1,410¶ | 1,250¶ | 160¶ |

* Two men graduate students taking courses in both the schools of Medicine and Pharmacy.

† Thirty students (27 men, 3 women) registered in the Graduate School, College Park, are taking courses in the schools of Medicine and Pharmacy.

‡ Six graduate students (5 men, 1 woman) taking courses in both the Schools of Medicine and Pharmacy. One junior medicine student (man) registered, also, in the Graduate School, College Park, and taking graduate work in medicine.

\$ Twenty-six students (23 men, 3 women) registered in the Graduate School, are taking courses in the schools of Medicine and Pharmacy. One junior medical student (man) registered, also, in the Graduate School, and taking graduate work in medicine.

⌞ One graduate student (man) taking courses in both the schools of Medicine and Pharmacy. One senior medical student (man) registered also in the Graduate School, College Park, and taking graduate work in medicine.

¶ Twenty-three students (21 men, 2 women) registered in the Graduate School, are taking courses in the schools of Medicine and Pharmacy. One senior medical student (man) registered, also, in the Graduate School, and taking graduate work in medicine.

GEOGRAPHICAL DISTRIBUTION OF STUDENTS (BALTIMORE SCHOOLS) (By States, Territories, and Foreign Countries)

| | Semester) | | | | (First Semester) |
|---------------------------|-----------|---------|---------|--------------------------|------------------|
| | 1932-33 | 1933-34 | 1934-35 | 1933-34 | 1934-35 |
| Alabama..... | ... | ... | 1 | South Dakota..... | 2 |
| California..... | 2 | 2 | ... | Tennessee..... | 1 |
| Connecticut..... | 58 | 57 | 64 | Texas..... | 2 |
| Colorado..... | 1 | ... | ... | Utah..... | 2 |
| Delaware..... | 12 | 8 | 7 | Vermont..... | 3 |
| District of Columbia..... | 16 | 19† | 20 | Virginia..... | 4 |
| Florida..... | 2 | 2 | 1 | Washington..... | 22 |
| Georgia..... | ... | 3 | 3 | West Virginia..... | 1 |
| Illinois..... | ... | ... | 1 | Wisconsin..... | 33 |
| Indiana..... | 2 | ... | ... | | 34 |
| Iowa..... | ... | ... | 1 | | 1 |
| Kentucky..... | ... | ... | 1 | British West Indies..... | 1,493 |
| Maine..... | 5 | 5 | 5 | Canada..... | 2 |
| Maryland..... | 884* | 906† | 880† | Canal Zone..... | 1 |
| Massachusetts..... | 22 | 25 | 22 | China..... | 3 |
| Michigan..... | 1 | 2 | 1 | Colombia..... | 2 |
| Missouri..... | ... | ... | 1 | Costa Rica..... | 1 |
| Montana..... | ... | ... | 1 | Ireland..... | ... |
| New Hampshire..... | 1 | 3 | 4 | Santo Domingo..... | ... |
| New Jersey..... | 185 | 155 | 123 | Puerto Rico..... | 5 |
| New York..... | 83 | 75† | 60† | Totals..... | 1,508 |
| North Carolina..... | 42 | 37 | 37 | Duplicates..... | 2* |
| Ohio..... | 4 | 3 | 2 | | 7† |
| Pennsylvania..... | 84 | 82 | 71 | Net Totals..... | 1,487 |
| Rhode Island..... | 22 | 17 | 15 | | 1,412 |
| South Carolina..... | 5 | 5 | 8 | | 2‡ |
| | | | | | 1,410 |

Tabulation of Student Enrollment in the Baltimore Schools According to Maryland and "Elsewhere."

| | Dentistry | | | Law | | | Medicine | | | Nursing | | | Pharmacy | | | Total | | |
|-------------------|-----------|-------|-------|---------------|-------|-------|-------------------------|-------|-------|-------------|-------|-------|------------|-------|-------|-------|-------|-------|
| | 32-33 | 33-34 | 34-35 | 32-33 | 33-34 | 34-35 | 32-33 | 33-34 | 34-35 | 32-33 | 33-34 | 34-35 | 32-33 | 33-34 | 34-35 | 32-33 | 33-34 | 34-35 |
| Maryland | 108 | 102 | 101 | 182 | 189 | 205 | 189 | 189 | 231 | 58 | 66 | 61 | 347 | 318 | 268 | 884 | 906 | 880 |
| Elsewhere | 323 | 275 | 251 | 6 | 10 | 12 | 224 | 227 | 199 | 53 | 58 | 58 | 18 | 11 | 12 | 624 | 531 | 532 |
| | 431 | 377 | 352 | 188 | 199 | 217 | 413 | 458 | 444 | 111 | 124 | 119 | 365 | 329 | 280 | 1,508 | 1,487 | 1,412 |
| ‡ First Semester. | | | | § 2 Maryland. | | | ¶ 5 Maryland. |  |  | \|\| 1 Maryland. | | | Duplicates | | | 2§ | 7¶ | 2\|\| |
| | | | | | | | 1 District of Columbia. | | | 1 New York. | | | | | | | | |
| | | | | | | | 1 New York. | | | | | | | | | | | |
| Net Totals | | | | | | | | | | | | | | | | 1,506 | 1,480 | 1,410 |

OFFICERS OF INSTRUCTION (BALTIMORE SCHOOLS)

| | 1932-33 | | | | | 1933-34 | | | | | | |
|-------------------------|-----------|-----|----------|----------------|----------|---------|-----------|-----|----------|-----------------|----------|-------|
| | Dentistry | Law | Medicine | Nursing | Pharmacy | Total | Dentistry | Law | Medicine | Nursing | Pharmacy | Total |
| Professors Emeriti.... | 2 | 1 | 8 | .. | 1 | 12 | 2 | 1 | 7 | .. | 1 | 11 |
| Professors..... | 10 | 5 | 53 | 1 | 5 | 74 | 10 | 5 | 55 | 1 | 4 | 75 |
| Associate Professors... | .. | .. | 25 | .. | 2 | 27 | .. | .. | 24 | .. | 2 | 26 |
| Assistant Professors... | 12 | .. | 12 | 1 | 5 | 30 | 13 | .. | 12 | 1 | 5 | 31 |
| Lecturers..... | 3 | 13 | 1 | .. | .. | 17 | 3 | 12 | 1 | .. | .. | 16 |
| Associates..... | .. | .. | 52 | .. | .. | 52 | .. | .. | 49 | .. | .. | 49 |
| Instructors..... | 39 | .. | 50 | 5 | 6 | 100 | 40 | 1 | 49 | 5 | 6 | 101 |
| Assistants..... | 2 | .. | 55 | 2 | 16 | 75 | 2 | .. | 51 | 2 | 18 | 73 |
| Gross Total..... | 68* | 19 | 256 | 9 | 35* | 387 | 70* | 19 | 248 | 9 | 36* | 382 |
| | | | | Duplicate..... | | 1† | | | | Duplicates..... | | 4‡ |
| Net Total..... | | | | | | 386 | | | | | | 378 |

* The names of sixteen faculty members are listed, also, in the College Park section of the Officers of Instruction in the general catalogue. These are members of the faculty of the College of Arts and Sciences who have been detailed to teach in the schools of Dentistry and Pharmacy.

† The Professor of Embryology and Histology (Dentistry) is, also, Associate Professor of Medical Jurisprudence (Medicine).

‡ The Professor of Anatomy and Oral Surgery (Dentistry) is, also, the Professor of Oral Surgery (Medicine).

§ The Professor of Embryology and Histology (Dentistry) is, also, Associate Professor of Medical Jurisprudence (Medicine).

|| The Assistant Professor of Exodontia (Dentistry) is, also, Instructor in Exodontia (Medicine).

¶ The Lecturer in Physical Diagnosis (Dentistry) is, also Assistant in Medicine (Medicine).

Additional names listed with the Officers of Instruction:

1 Advisory Dean, School of Pharmacy, is, also, Professor Emeritus of Chemistry, School of Dentistry.

1 Hospital Superintendent (has rank of professor).

1 Professor of Industrial Education, College of Education (College Park) conducts afternoon and evening courses in Baltimore.

1 Professor of Chemistry, College of Arts and Sciences (College Park).

1 Professor of Physics, College of Arts and Sciences (College Park).

1 Professor of Zoology, College of Arts and Sciences (College Park).

Do not teach in Baltimore, but they are in charge of their respective departments in the schools of Dentistry and Pharmacy.

DEGREES AND CERTIFICATES CONFERRED (BALTIMORE SCHOOLS)

1933

Total for
Biennium

| | 1933 | | | 1934 | | | Total for Biennium | | |
|---|-------|-----|-------|-------|-----|-------|-----------------------|-----|-------|
| | Total | Men | Women | Total | Men | Women | Total | Men | Women |
| Honorary Degrees: | | | | | | | | | |
| Doctor of Agriculture..... | 1 | 1 | ... | ... | ... | ... | 1 | 1 | ... |
| Doctor of Divinity..... | 1 | 1 | ... | ... | ... | ... | 1 | 1 | ... |
| Doctor of Laws..... | 1 | 1 | ... | ... | ... | ... | 1 | 1 | ... |
| Doctor of Literature..... | ... | ... | ... | 1 | 1 | ... | 1 | 1 | ... |
| Doctor of Science..... | ... | ... | ... | 1 | 1 | ... | 1 | 1 | ... |
| Total Honorary Degrees..... | 3 | 3 | ... | 2 | 2 | ... | 5 | 5 | ... |
| School of Dentistry: | | | | | | | | | |
| Doctor of Dental Surgery..... | 89 | 88 | 1 | 81 | 80 | 1 | 170 | 168 | 2 |
| School of Law: | | | | | | | | | |
| Bachelor of Laws..... | 34 | 31 | 3 | 38 | 37 | 1 | 72 | 68 | 4 |
| Certificate of Proficiency*..... | 1 | 1 | ... | 3 | 2 | 1 | 4 | 3 | 1 |
| School of Medicine: | | | | | | | | | |
| Doctor of Medicine..... | 86 | 85 | 1 | 103 | 101 | 2 | 189 | 186 | 3 |
| School of Nursing: | | | | | | | | | |
| Graduate in Nursing..... | 25 | ... | 25 | 27 | ... | 27 | 52 | ... | 52 |
| School of Pharmacy: | | | | | | | | | |
| Bachelor of Science in Pharmacy..... | 26 | 25 | 1 | 20 | 20 | ... | 46 | 45 | 1 |
| Graduate in Pharmacy..... | 82 | 79 | 3 | 100 | 93 | 7 | 182 | 172 | 10 |
| Total Professional Degrees and Certificates..... | 343 | 309 | 34 | 372 | 333 | 39 | 715 | 642 | 73 |
| Total All Degrees..... | 346 | 312 | 34 | 374 | 335 | 39 | 720 | 647 | 73 |

* Special law students are admitted (under the rules of the Association of American Law Schools) with less than two years of college credit. They must satisfy the State of Maryland requirement to register as a law student with the Court of Appeals—graduation from high school, or the equivalent thereto. The number of special students admitted (in any year) must not exceed in any year ten per cent of the average number of first-year students during the preceding two years; and they must show some special qualifications for the study of law. They are not candidates for the degree of bachelor of laws, but they are awarded certificates of proficiency on the satisfactory completion of the prescribed course of study.

Military Department

ALVAN C. GILLEM, JR., *Major, Infantry, P. M. S. & T.*

THIS report covers the activities of the Military Department of this institution for the past biennium.

I. (a) Basis of Instruction

The instruction conducted by or under the direction of the personnel composing this Department is based on directives contained in Army Regulations. The pertinent file is Series 145-10. In addition to instructions contained therein, the War Department Program of instruction, dated February 3, 1933, prescribes subject matter for the respective courses—Basic and Advanced. This latter document revised previous courses, and today presents a progressive instructional continuity that meets the objectives for which designed. Local military representatives are permitted reasonable leeway to the end that adjustments to meet local conditions can be made without reference to higher authority. This is desirable and indicates a better understanding of the problem.

(b) Type and Strength of Unit

The institution has for some years maintained an Infantry Unit of the Senior Division. No additional units are recommended at this time. Infantry being the basic arm, instruction in the tactics and technique of Infantry equips the student officer for a better understanding of the needs and requirements for its success in time of need. The establishment of other type units would result in dispersion of effort and personnel with a probable decrease in general efficiency of the whole.

The average strength of the unit per year for the past two years has been approximately as follows:

| | |
|----------------------|-------|
| Seniors | 25 |
| Juniors | 38 |
| Sophomores | 280 |
| Freshmen | 340 |
| | <hr/> |
| | 684 |

These averages indicate an increase of approximately 15 per cent. The Junior Class during the past biennium has increased nearly 40 per cent, a splendid advance. These additional advanced course students have been sorely needed in the past to fill required non-commissioned officer posts in the regimental organization.

(c) Organization

During the past year a much improved organization of the regiment has been effected. The two battalion units of four companies each have been cut to three companies, and a third battalion of like composition added. This change was permitted by the marked increase of allotted vacancies for the First Year Advanced Course (Junior Class). On the occasion of my last report the total number of advanced course students (Juniors and Seniors) was fifty. It is now ninety-four. As leadership qualities can best be developed through the exercise of command functions, the cadet regiment forms a splendid laboratory for the future Reserve Officers. Student officers here at Maryland are guided and counseled by the instructional staff, but definite responsibility for performance devolves upon the student concerned. Errors are corrected and correct procedure indicated in all cases. Endeavor is made to instill in the student officer a high regard for the leadership attributes of integrity, loyalty, knowledge, and punctuality.

(d) Instructional Staff

The staff of the Military Department has remained numerically the same for the past two years. One instructor, a First Lieutenant, was transferred to other duties and replaced by a Captain, and one enlisted man was detailed for duty as military storekeeper. The Departmental staff at present consists of one Major Infantry, Professor of Military Science and Tactics; two Captains, Infantry, and one First Lieutenant, Infirmary, all of the United States Army. One Warrant Officer, one Staff Sergeant, and one Private are assistants to commissioned instructors. All officers have definite instructional assignments, and at present each is responsible for all instruction given a particular class. The large number of Freshman, or First Year Basic, students makes it an exceedingly heavy load, and it is believed that an additional officer of the grade of Captain or First Lieutenant should be assigned here. This will permit a reallocation of duties to the instructors of the basic courses.

All officers combine for outdoor drills and exercises which are carried out under the direct supervision of the Professor of Military Science and Tactics.

All work on the indoor gallery range is under the direction of officers especially qualified for such duties. An enlisted assistant, however, assists the Dean of Women in the capacity of rifle coach for the Girls' Rifle Team.

The handling of all administrative details incident to the functioning of the Department, of course, devolves upon the Professor of Military Science and Tactics, and responsibility for all results attained likewise rests with the Departmental head.

(e) Facilities and Equipment

(1) Class rooms provided by the University are adequate, well lighted and suitably located. Gun and other store rooms are well located and for the time being adequate. At present there is no assembly room wherein the entire unit can be concentrated, except the Armory-Gymnasium. This being under dual control, arrangements must be completed with another Department prior to initiation of plans. During inclement weather, this is not simple, as generally the space is likewise desired for use by the Physical Education classes. Therefore, there is a decided need for an armory, and so an effort should be directed toward that end. It is recommended that the Federal Government be approached during the coming year to allocate funds to this institution for such a building. The location of this University would make such a building of great value and utility at all times, and particularly so during a major emergency. The close proximity of the National Capital together with the splendid road and rail net adjacent to the University makes this locality of extreme strategical importance in case of mobilization and meanwhile constant use could be made of such a facility for instructional and other purposes.

(2) The Federal Government issues gratis the uniforms utilized by basic students. These are neat in appearance and the texture is good. This issue uniform meets all present requirements.

Funds are allocated for purchase of officer type uniforms for the Advanced Course students. Extreme care is exercised in the expenditure of this money. Uniforms are selected through the medium of competitive bids, and Maryland firms are encouraged to submit samples and prices. Two of the past four years awards have been made to firms within the State. Shoes are supplied by a Maryland firm. They are most satisfactory, of excellent material and cut, and extremely low-priced.

(3) Drill grounds for outdoor instruction are well located and suitable for the required work. The University authorities have cooperated splendidly with the Department, and all reasonable requests are met.

(4) The funds provided by the University for maintenance and purchase of supplies required by the Department are carefully expended, and even though reduced because of budgetary economies have been sufficient to carry on.

2. Methods and Progress

Military instruction at this institution has conformed to the practices in vogue at the Special Service School of the Infantry arm, and is based on correct pedagogical principles. It is believed that the character and standard of instruction is satisfactory to proper University authorities, and being such it is, therefore, on a par with other Univer-

sity work. Credits awarded for work accomplished compare favorably with credit given at like institutions. As the War Department has rated the Unit "Generally Excellent" for the past biennium, the conclusion may be deduced that correct methods are employed.

3. Interests Served by the R. O. T. C. Unit

It is recommended that the requirement that all physically fit male students over fourteen years of age and who will be citizens of the United States at maturity must take the Basic Course as a prerequisite to graduation be continued.

In view of the reciprocal responsibility of State to citizen, and, therefore, citizen to State, it is my considered belief that the course of instruction given basic students is beneficial to individual, to State, and to country. The knowledge derived from courses which include healthy, outdoor physical training, principles of personal hygiene and first aid, map reading and making, as well as marksmanship, will prove helpful to the future citizen no matter in what walk of life he may enlist.

Students who satisfactorily complete the Basic Course and are especially selected by the President of the University and the Professor of Military Science and Tactics are eligible for the Advanced Course. During the past, however, approximately fifty per cent of the eligible basic graduates have requested enrollment.

Students who successfully complete the Advanced Course are tendered commissions as Second Lieutenants in the Officers' Reserve Corps. During the past biennium a total of fifty-three graduates of the course have accepted this honor and have been so commissioned. The representative young officers from this University have been splendid specimens of manhood, reasonably well prepared for their tasks as leaders of their country's defense forces should necessity demand. Every endeavor is made to develop initiative and clear thinking to the end that they may be able to adjust themselves rapidly to changing situations. This is believed advisable in view of modern conditions.

4. Recommendation

Based upon the foregoing statements, I, therefore, submit for your consideration and such action as you deem desirable the following recommendations:

(a) That the War Department be requested to increase the number of commissioned officers on duty at this institution by one of suitable rank (Captain or First Lieutenant).

(b) That an endeavor be made through such agencies as deemed expedient to have the Federal Government appropriate funds for the construction of an Armory on this campus.

(c) That the University authorities continue the requirements now prescribed for all able-bodied undergraduate male students.

Buildings and Grounds (1933-1934)

H. L. CRISP, *Superintendent Buildings and Grounds.*

THE program of the past two years has been largely one of required maintenance. Reduced budgets and increased costs of materials were influencing factors. With some commodities, such as coal, doubling in price, the problem has been a difficult one.

With the completion and occupancy of the new Engineering building, some changes were necessary in the old units to provide for the adjustments. Work benches were constructed, partitions built, and wiring was done to equipment and in rooms.

The old Y Hut was razed and its site was cleaned, graded, and seeded.

Silvester Hall hot water line is in need of replacement. We are handling the work on the installment basis, viz, a portion renewed yearly until the job is completed.

Among repair items were those made to slate roofs of Engineering, Calvert and Silvester Halls, old Horticulture, Morrill Hall and Agriculture buildings. Gutters and downspouts were renewed on the old Library and the old Horticulture buildings. Windows of the following buildings were given two exterior coats of paint: Chemistry, Dining Hall, Engineering, Agriculture, Calvert and Silvester Halls. College Horticulture greenhouses were reputtied and painted.

A convertor was placed in the Experiment Station Horticulture building. This building is now added to those heated by the central plant.

A board running track, one-twelfth of a mile long and ten feet wide, was constructed at the Athletic Field. A new hockey field was drained, graded and prepared for the use of the girls in athletic work.

Two small utility buildings or sheds, once a part of our old Filtration Plant, were removed and the area graded and seeded.

A blue stone walk to Margaret Brent Hall was constructed. This walk was inexpensively lighted.

Parking places at Calvert and Silvester Halls were extended and the more or less hazardous parking along University Lane transferred to this area.

Towson and Rock Creek nurseries each donated the University twenty-five Japanese Cherry trees. These were planted along with sixty small trees—elms, maples and oaks—from the State Nursery. All were given the best of care. However, they suffered from the severe drought of last summer and we fear quite a few are lost.

After the widening of the Washington-Baltimore boulevard there was considerable grading and sodding to be done on both sides thereof. Thirty-two five and one-half inch caliper American elms were planted along the front of our property adjacent to the boulevard. Evergreens

were planted on the east side. A concrete walk was laid from our south boundary to the Rossburg Building, and street lights installed along it.

Two new buildings are in the process of construction, viz, a girls' dormitory and Arts and Science Building.

The department is still in need of a service building. Buildings added and to be added to the campus group make imperative the installation of another boiler in the heating plant. Numerous other projects are desirable but they have been enumerated time and again and we know will be fostered as soon as conditions permit.

Feed, Fertilizer and Lime Inspection Service

LESLIE E. BOPST, *Associate State Chemist.*

THIS Department has assigned to it the enforcement of the State Feed, Fertilizer and Lime Laws, which are designed to regulate the manufacture and sale of feeds, fertilizers and limes and to prohibit misbranding and adulteration. They require the registration of each brand or kind for each calendar year, before being offered or exposed for sale. These laws further require all attached cards to be printed with brand or trade names, and names of the manufacturers or parties responsible for their sale. On commercial feed packages there must appear guarantees for protein, fat and fibre, together with the name of each ingredient of which the mixtures are composed and, in the case of by-product feeds, a statement of composition. Commercial feeds are defined as including all by-product material, mixed feeds and mineral mixtures used for domestic animals, which include dogs, cats, foxes, rabbits and poultry. Fertilizer manufacturers must have printed upon the sack or on attached tag the guaranteed analysis for nitrogen, available phosphoric acid and water soluble potash. On lime packages must appear the minimum guarantees for calcium and magnesium oxides. Provision is made for the collection and analysis of official samples, the publication of results of such examinations for the information of the public, and for holding responsible all dealers and selling agents who make sales contrary to requirements with respect to labeling, guaranteeing, misbranding, adulteration and non-registration.

Our Biennial Report for 1930 explained in detail the projected plan of law enforcement, which is designed to confine most of inspection activities in those directions where past experience has indicated that the greatest amount of disturbance may be found. There are certain products which, by reason of their peculiar adaptability for adulteration or misbranding, or their high market value, offer particularly fertile fields for falsification. It is necessary, therefore, to keep under constant surveillance those materials and products.

Two minor changes were made in the Feed Law by the 1933 session of the Legislature—one involved a reduction in license fee from \$20.00 to \$15.00, the other increased the scope of our activities to the extent of bringing within the purview of the Act all materials sold for feeding purposes which contain more than 60 per cent of water. As a result, we now supervise the manufacture and sale of semi-solid milk by-product feeds, as well as all canned dog foods. The anticipated reduction in revenue, due to the lowering of the registration fee on feeds, has been compensated somewhat by the additional products which come within the jurisdiction of this Statute.

Condensed Statement of Control Activities

In the interest of clarity and convenience, the report below is presented under the general sub-headings of the industries regulated.

FEEDS

| | 1933 | 1934 | Total |
|---|-------------|-------------|-------------|
| Samples collected by Inspectors.... | 2,243 | 2,330 | 4,573 |
| Samples forwarded by Maryland residents | 164 | 272 | 436 |
| Licenses issued (brands licensed)... | 2,035 | 2,195 | 4,230 |
| Feed prosecutions instigated | 37 | 17 | 54 |
| Receipts in license fees..... | \$32,810.00 | \$29,265.00 | \$62,075.00 |

FERTILIZER

| | | | |
|---|-------------|-------------|-------------|
| Samples collected by Inspectors.... | 1,147 | 1,249 | 2,396 |
| Samples forwarded by Maryland residents | 129 | 111 | 240 |
| Licenses issued (brands licensed)... | 656 | 754 | 1,410 |
| Receipts from fees and tonnage tax. | \$14,880.72 | \$16,764.36 | \$31,645.08 |

LIMES

| | | | |
|---|------------|------------|------------|
| Samples collected by Inspectors.... | 113 | 92 | 205 |
| Samples forwarded by Maryland residents | 90 | 77 | 167 |
| Licenses issued (brands licensed)... | 79 | 86 | 165 |
| Receipts from license fees..... | \$1,185.00 | \$1,320.00 | \$2,505.00 |

As the foregoing tables show, approximately 7,174 samples of feed, fertilizer and lime were collected by Inspectors and examined by our chemists. This is an increase of 373 samples as compared to the years 1931 and 1932. In addition to official samples tested, gratuitous examinations were made upon 843 samples which were forwarded by residents of the State. The Inspection Laboratories endeavor to so arrange their official duties that reports of correspondents' samples are returned not later than ten days after reception of the samples at College Park. Naturally this constitutes a very useful public service, for which the University is the recipient of much favorable comment. Obviously the results obtained on samples forwarded by interested parties are never construed as official. Since a representative sample is as essen-

tial as an accurate analysis in judging the quality of a product, this organization can vouch only for the accuracy of the results obtained on the materials submitted. While there has been some objection made to the practice of analyzing samples for individuals, this work will be continued so long as there is evidence that it constitutes a useful service. In this connection it should be borne in mind that this Department cannot perform work in such volume, or in such frequency as to exercise a systematic control over purchase. This clearly encroaches upon the territory of the commercial laboratory.

In addition to the official samples listed, inspections were made of importations of sardine meal from Japan; of wheat bran and wheat middlings from the Argentine; of whale meal from South American waters; of soy bean oil meal from Manchuria, as well as numerous cargoes of alfalfa by-products shipped by way of the Panama Canal from California. These inspections resulted in the condemnation and entry refusal of hundreds of bags of feeding materials which were misbranded and adulterated.

The testing of materials represented as having vitamin potency was continued. As pointed out in our last report, this type of regulatory work is expensive and time consuming, as compared with other routine methods of analysis. In the course of the past two years our Laboratory tested 48 commodities purporting to contain one or more of the vitamins. Maryland is the only State on the Atlantic Seaboard which is rendering its feed consumers this valuable service.

Congress has empowered State officials, under certain circumstances, to report either to their branch laboratories or to the United States Attorney direct, offences with respect to Feed Law enforcement work which have been committed under the Federal Law. The United States Supreme Court has held that the procedure adopted in the development of such prosecution is entirely valid and is not subjected to the ministerial limitations imposed upon the Secretary of Agriculture. Operating under this authority, during the years 1933 and 1934 the Maryland Department originated 54 violations of the Federal Law that were perpetrated by out-of-State manufacturers. Ten years of such cooperation between the Maryland Department and the Federal Government, involving 434 cases, has proved of inestimable value. Not only is a means provided to place the responsibility for a misbranded or adulterated shipment upon the out-of-State shipper, where it rightfully belongs, but a medium is afforded whereby our local dealers are protected against prosecution for sales made in good faith and in entire ignorance of any intentional illegality. The reference of an interstate violation to Federal authorities most always results in expediting financial reimbursement to the consignee if the nature of the violation indicates a monetary loss. Another point in favor of Federal cooperation is the general salutary effect of such cases upon local trade. Adverse publicity travels rapidly and local manufacturers, knowing of Federal action through State cooperation, hesitate before violating the State

Statute, even though they would not be held for Federal prosecution. In short, without taking advantage of Federal cooperation, a State official cannot adequately protect the buyers of feed within his territory and insure that moral justice be done to all parties concerned.

In enforcing the three State Statutes entrusted to us, the Inspection Service has attempted to adopt a constructive attitude. Observation through more than ten years of law enforcement has demonstrated convincingly that only an insignificant proportion of the members of the industries concerned deliberately violate the laws. Most of them earnestly desire to comply with all reasonable regulations, not only on ethical grounds, but also because it is the part of good business. Recognizing this, the Department has chosen to regard the three laws as corrective rather than punitive, and has adopted the attitude of offering constructive suggestions which should enable manufacturers to keep their products in compliance with these laws. It has not hesitated, however, to initiate proceedings in those instances where the protection of the consumer, or negligence or wilfulness on the part of the shipper, indicated such action to be appropriate.

The Feed, Fertilizer and Lime Inspection Service plans no change during the coming biennium in its administrative policy. We recognize fully the prevalent need, especially at this time, for drastic economy in enforcement operations. We are making every effort so to employ the facilities at our command, that the greatest possible dividends may be obtained in the agricultural interests we represent.

State Department of Forestry

DR. F. W. BESLEY, *State Forester*.

THE regular administrative work of this Department, dealing with forest protection, public shade trees, assistance to woodland owners, State Forest Nursery, and educational work, has been carried on as usual during the biennium ending September 30, 1934. The chief center of activity, however, during the past year and a half has been on the State forests and parks through the operation of the Civilian Conservation Corps camps.

State Forests and Parks

The Department of Forestry administers eight State forests, comprising 50,170 acres of State-owned land and 600 acres of auxiliary State forests; three State parks of 1,344 acres, and 1,200 acres of auxiliary State park land. During the biennium, 2,541 acres were added to the State forests, and 26 acres to the State parks.

These small additions were made possible through revenue derived from the forests and parks. A recent report upon the best permanent use of the lands of the State shows that approximately 500,000 acres of the 2,200,000 acres of forest land should be in public ownership, in the form of State forests and State parks.

The opportunity offered in developing and improving State forests and parks, through the Emergency Conservation Work program, emphasizes the need of large forest land purchases to take immediate advantage of this situation.

Work of the Civilian Conservation Corps

This Federal Agency, financed entirely with Federal funds, was organized in April, 1933, to carry on conservation work on publicly owned forest and park lands. The Forestry Department applied for ten work camps of 200 men each—eight for the State forests, one for the National Guard lands at Camp Ritchie and one for the Frederick City watershed. These camps, with a few changes in location, have continued, and an additional camp was located on the Fort Frederick State Park in April, 1934. Approval has been given to continue all the camps to April 1, 1935, the end of the authorized period.

The work performed has been of the greatest value in improving the State forests and parks, as shown by the following summary, covering the period up to October 1, 1934:

1. Roads and trails have been built to make the forests accessible not only for administrative purposes, but for the use of the public: 188 miles of roads and 196 miles of trails have been constructed and 109 vehicle and 37 horse and foot bridges built.

2. The fire protection system of the forests has been improved by the building of six fire observation towers, the construction of 166 miles of telephone line for an inter-communicating system between towers, forest officer, forest wardens and telephone exchanges, the clearing of 162 miles of fire breaks, and the use of 8,238 man days on fire control work.

3. The recreational use facilities of the forests and parks have been greatly extended by the erection of 11 permanent buildings and 215 small structures, the preparation of 16 public camp grounds with water systems, numerous small camp sites, and the building of dams for creating ponds and water supplies.

4. The forests have been improved by cleanings and improvement cuttings on 13,330 acres, 684 miles of forest boundaries have been surveyed and marked, and 331 acres of open land have been planted in forest trees.

There have been many other miscellaneous accomplishments during this period, all contributing toward placing the State forests and parks, under an intensive system of management to bring about their highest usefulness.

It was fortunate that Maryland, prior to 1933, had acquired some 50,000 acres of State forest and State park land. Eleven CCC camps of 200 men each were placed on these areas without delay. The allotment for Maryland in the CCC enrollment is 3,500 men, so that 1,300 were sent to other states because Maryland did not have a sufficient area of State forests and parks to employ them. Furthermore, it is very likely that the CCC will continue after April 1, 1935, and if the State is to receive the full benefit from this important work, additional acreage of State forests and State parks must be acquired to maintain the present working force of camps, and still further additions will be needed to employ the full Maryland quota of 3,500 men in case the Emergency Conservation Work is continued on the present scale.

As a relief measure alone, the CCC has been a great success. Added to this is the splendid work accomplished in building roads, trails, fire and telephone lines, in erecting fire towers and permanent buildings, and in opening the forests and parks to increased use. These are real achievements which should be extended.

Forest Protection

The protection of the 2,200,000 acres of Maryland woodlands from forest fire is a responsibility placed by law upon the Forestry Department.

An assistant forester is in charge of the forest protection organization with three district foresters directing activities in three districts of the State, assisted by nine district forest wardens; 25 forest fire towers, each manned by an observer; 20 forest guards to respond to fire calls; and 650 forest wardens, paid by the hour for fire fighting. Each forest warden is authorized to employ such additional assistance as may be necessary in combatting fires. In the sections of Maryland where State Forests are located, the Civilian Conservation camps of the Federal Government have proven a welcome addition to the available man power in protecting public properties and adjacent areas. Protection of privately owned woodlands throughout the State continues to be the primary responsibility of the forest wardens and their assistants.

There were 685 fires in 1933, which burned 9,627 acres of forest land, causing property damage of \$21,077. It cost 4,077 for actual labor in extinguishing these fires, the counties paying one-half of the cost and the State the other half. In addition to this expense, the State bore the cost of supervision, equipment, telephone service, travel and detection service, amounting to \$36,857. This was a very favorable year for forest protection, due to humid weather conditions. Not since 1929 have there been fewer than 1,000 fires reported within a year, and it is probable that 1927 is the only year on record that was as favorable as 1933 for forest protection. The expenditures for the year were, therefore, far lower than during years of normal fire hazard.

Although weather conditions were extremely favorable for fire prevention and control, due credit should go to a forest protection organization which functions exceptionally well, resulting in prompt attack and energetic fire fighting. The fact that the average fire for the year burned only 14 acres is an excellent indicator of the fire fighting efficiency. This record is nearly as good as the all-time record of 13-1/5 acres, which was established in 1932.

Adequate forest protection, which is generally interpreted as not over one-tenth of one per cent of the forest area burned over in any normal year, is Maryland's goal. Yet more than four-tenths of one per cent burned in the favorable year 1933, with even higher loss apparent in 1934 and years of as high hazard.

Notable progress toward this objective was made until 1933, when heavy cuts in the fire protection budget stopped progress towards this goal. New fire observation towers and other protection facilities have been provided through Federal Emergency Conservation Funds, but State funds are necessary for manning the additional towers and utilizing these valuable improvements.

Public Shade Trees

Under existing law the Forestry Department is given jurisdiction over all trees growing within rights-of-way of public highways and along the streets of incorporated towns. Each year many thousands of these trees have to be trimmed to clear the wires of the public service companies, which have charters to use the public highways. Where the trimming of trees is required, it is done under a permit system in which the trimming is supervised by a special tree warden, employed by the Department of Forestry. There are fifty-five of these tree wardens in different parts of the State who take care of this service. The cost is borne by the applicant, so that the work is self-supporting.

The Department also gives free service to towns, public institutions and individuals, making examinations and submitting plans for the planting, care and protection of trees. The increasing interest in trees and their care is reflected in the increasing number of applications for assistance and advice regarding insects and tree diseases, and identification of trees and shrubs from samples submitted.

There is also a growing interest in the planting of trees along the highways as the most economical and effective way of beautifying the roadsides. The State Roads Commission, during the past biennium, has planted more than 2,000 trees on 14 miles of highway, using trees from the State Nursery. In addition, more than 3,500 trees have been planted by private owners along the highways, taking advantage of the offer of the Department to furnish trees for this purpose at very low cost.

Assistance to Woodland Owners

The forest area of Maryland consists of 2,100,000 acres in private ownership and about 100,000 acres in public ownership; hence, the practice of forestry is, and must continue to be, largely a problem for the private owner. The Department is concerned in giving these owners every help and encouragement it is possible to give in carrying out conservation practices in the handling of their woodlands.

Forestry practices, now conducted on the State forests, serve as excellent demonstrations, and the establishment of the Lumber Code, carrying with it the obligation on the part of lumber concerns operating under it to put in effect some system of fire protection and selective cutting, is having effect in improving conditions. Unless, however, the forester can convince the landowner on his own woodlot or timber tract of the advantages of forestry practice, not much progress can be made. This is precisely what the Forestry Department, for many years, has been doing in furnishing forestry experts to examine woodlands, prepare plans of management or planting plans, as may be required, and to assist the owner in finding a suitable market for his forest products.

During the biennium, 39 different wooded areas, comprising 4,609 acres, were examined at the request of the owners, and plans of management prepared, and on 13 of these tracts, comprising 531 acres, the trees for cutting were selected and valuation estimates made. There has been a falling off in the requests for this service, due to the reduced demand for forest products. This, however, is only a temporary condition it is believed, and greatly increased activity in this work is anticipated.

State Forest Nursery

Chapter 348, Acts of 1912, provided for the "establishment of a State Forest Nursery for the purpose of growing forest trees for planting on the State Reserves, and for distribution to private landowners at cost to encourage tree planting." A nursery was established in 1914 on the grounds of the University of Maryland, at College Park, for the purpose of carrying out the provisions of this Act.

The Roadside Tree Law, enacted in 1914, which placed the care and protection of all trees growing within the rights-of-way of public highways, or along the streets of incorporated towns, under the jurisdiction of the Forestry Department, also provided for the planting of trees along the public highways.

The growing of larger trees, suitable for planting along the highways, called for a considerable enlargement of the Nursery, and the subsequent demand for trees indicated an appreciation of the service on the part of the public.

In 1924, with the passage of the Clarke-McNary Law by the Federal Congress, money was made available to the State on a cooperative basis for the distribution of trees for forest and windbreak planting. This called for further expansion in order to furnish suitable trees for the planting of windbreaks.

The State Forest Nursery distributes trees at cost for three specific purposes, and for these only:

1. *Trees for Forest Planting.* These are small seedlings or transplants to be used exclusively for reforesting land. A minimum of 1,000 trees may be obtained by any one applicant.

2. *Trees for Windbreak Planting.* These are available only to farmers, to be used exclusively for establishing windbreaks. A minimum of 100 trees may be secured for windbreak planting. For the purpose of such distribution a farmer is defined as a landowner who grows and sells from his land a farm crop, which may include live stock and poultry. A windbreak is defined as one or more continuous, compact rows of trees planted on the windward side of the farm home or farm buildings for the sole purpose of protection from winds.

3. *Trees for Roadside Planting.* These are for planting along public highways or on public grounds and available only (1) to public agencies, supported by taxation, and State-aided institutions which receive direct State appropriations for maintenance, (2) to landowners, for planting along a public highway on or adjacent to the land upon which they reside.

No ornamental stock of any kind is distributed, as this is the particular business of the commercial nurseries, and every effort is being made to avoid any competition with them. It is believed that the rules for the distribution of trees, as cited above, and which are enforced by signed agreements, are adequate protection.

The distribution of trees from the State Forest Nursery under these agreements, during the fiscal years 1933 and 1934, was as follows:

| 1933 | | | |
|---------------------|---------------|-------------|-------------|
| | Forest* | Windbreak† | Roadside‡ |
| Private lands | 189,576 | 4,034 | 2,206 |
| Public lands | 93,300 | 1,870 | 2,085 |
| | <hr/> 282,876 | <hr/> 5,904 | <hr/> 4,291 |
| 1934 | | | |
| | Forest* | Windbreak† | Roadside‡ |
| Private lands | 156,390 | 4,157 | 1,697 |
| Public lands | 333,140 | 200 | 1,283 |
| | <hr/> 489,530 | <hr/> 4,357 | <hr/> 2,980 |

* Trees for forest planting are generally small evergreen seedlings, 5-12 in. in height.

† Trees for windbreak planting are generally transplants, 12-14 in. in height.

‡ Trees for roadside planting are generally hardwood transplants, 7-12 ft. in height.

Educational Work

More public attention has been directed to forestry work in the general conservation program during the past two years than at any other time in the history of the movement. This has been brought about largely through the Emergency Conservation Work program, in which 850,000 or more young men from all sections of the country have spent from a few months to a year or more in the forest and park CCC camps in every State in the Union. A definite educational program is carried on in each of these camps, in which forestry is one of the subjects taught, and the work itself in the camp is largely practiced in forestry operation. The eleven State and four Federal camps in Maryland have not only had the benefit of this program, but the Forestry Department has, so far as practical, given special talks and illustrated lectures for the men in the camps.

The monthly "Newsletter," carrying special articles and relating the activities of the forestry field personnel, has been issued regularly and distributed to the forest wardens, public officials and newspapers. It has been noted that the newspapers use this material very generously.

The State Forester and his assistants have given approximately 200 addresses and illustrated lectures before various organizations throughout the State, including parent-teachers associations, service clubs and many other civic organizations.

A much more complete description of the activities of the State Department of Forestry will be found in the Report of the State Department of Forestry, issued separately.

The Maryland Geological Survey

DR. EDWARD B. MATHEWS, *State Geologist.*

THE Maryland Geological Survey during the biennium ending September 30, 1934, has been working along the same lines as in former years. Its activities may be summarized as (1) a study of the natural mineral wealth of the State; (2) the completion of reports on the geology and mineral deposits, the surface and underground water resources; and (3) the distribution of information covering a wide range of subjects, many of them outside the more specific interests of the Survey.

The first step in an adequate survey of the State and its resources—the preparation of an adequate topographic map—was completed several years ago and is now represented by topographic maps on the scale

of one mile to the inch for each of the twenty-three counties of the State. These county maps are in continuous demand and in constant need of revision to keep them up to date. This is one of the major activities of the Survey. During the last biennium new surveys or revisions have been made in Worcester, Charles, and St. Mary's, and new editions of the county topographic map have been issued for Anne Arundel, Baltimore, Calvert, Cecil, Harford, and Washington counties. There is immediate need for revision and republication of county maps of Queen Anne's, Worcester, Caroline, and Garrett counties.

Beside the standard topographic county maps the Survey has prepared a new base for a State map on the scale of one inch equals six miles on which a new geological map of the State was issued in 1933 and new State maps showing counties, with index of place names and hypsometric elevations by shading, are now in press.

No additional volumes have been added to the various series of Survey reports during the last biennium, though manuscripts are in hand for several, because the reduced appropriations for printing are practically consumed in the issuing of new editions of the county maps which are constantly in demand.

The demand for information on many lines continues unabated and the furnishing of this information occupies a large part of the time of the State Geologist, who is employed on a part-time basis.

During the last year, in cooperation with the CWA, the Survey has made two investigations of more than usual interest—the study of wells and underground waters throughout the State, and the determination of the depth to bed rock in the area of Baltimore City.

The study of underground water conditions involved interviewing well drillers and well owners in all parts of the State and resulted in the collection of records covering 3,500 wells, which have been accurately indexed and plotted on maps in such a way that underground water conditions can be forecast with reasonable accuracy for any place in the State.

The study of the rock floor underlying Baltimore resulted in the collection of 2,500 records, carefully plotted; the irregular surface of the rock floor has been mapped and from this in comparison with the present surface a convergence map on the scale of one inch equals one thousand feet has been prepared showing the thickness of overburden likely to be encountered at any point in the city where building foundations or wells are projected.

Maryland State Weather Service

DR. EDWARD B. MATHEWS, *Director*.

THE Maryland State Weather Service as now organized conducts its work in cooperation with the United States Weather Bureau, the local Section Director of the latter service serving as meteorologist for the State organization. Under his direction part-time assistants, in accordance with the agreement of cooperation between the State and Federal bureaus, are occupied in reducing the local climatic details of interest to Marylanders to a form where they are more readily available for supplying necessary local information not furnished by the Federal bureau to citizens of the State. The work also involves the maintenance of a series of voluntary observers who report to the central office, where their data are reduced to a form available for local use.

At irregular intervals there is also issued a small pamphlet describing in detail the climate of the State, which is sent to schools and to prospective settlers in the State. During the last biennium there was no call for printing of a new edition and practically no charges against the item of printing. During the coming biennium it will be necessary to issue another edition of this pamphlet as the supply of the last edition is now practically exhausted. The total appropriation is small and naturally little beyond the office compilation of data and occasional visits to the voluntary observers is undertaken.

MEMORANDA ON STATE WEATHER SERVICE

If the present State Weather Service were abolished and the work was supported only by the Federal bureau we would have a reduction of the climatological stations, now numbering approximately 50, to perhaps 30. We would have less care and inspection of the stations remaining and no well organized State source which gives local details as opposed to the more general Federal office.

The activities of the Baltimore City office would probably be cut one-third at the critical time of the day when forecasts are being telephoned to interested parties and we would not be able to issue any publication portraying the climate of Maryland like our brochure "Our Climate."

The fact that the State is cooperating with the Federal bureau permits the Federal bureau to do many things which it could not do if the State was not showing local interest in the way of local appropriation and cooperation. This practice of the Federal bureau of scaling their work according to the amount of cooperation shown by individual States has been growing constantly for some years and this fact

has been recognized by a large number of the States which cooperate with the Federal bureau much more generously than Maryland. New York, Michigan, Iowa and a number of other States maintain their own meteorological observatories and I am told that Iowa pays one-half of the total cost of the work conducted by cooperation in that State. Under our present arrangement we have 50 or more cooperating weather stations and observers which are under careful inspection through our cooperation and from their records we have prepared daily, monthly and annual State maps showing the precipitation, temperature, cloudiness and other climatological data which is not done in many of the other States. We further have by cooperation the advantage of the Federal frank for free postage on our publications and correspondence.

In view of the fact that the gross appropriation amounts to less than \$3,000 it is apparent that the State is getting a good bargain.

The Extension Service

DR. T. B. SYMONS, *Director.*

DURING the biennial period ended September 30, 1934, the Extension Service has been called upon to assume a wide variety of duties which were new and different from the lines of work carried in past years. With the advent of the present national administration on March 4, 1933, this country launched upon a program of controlled production in an effort to meet the emergency that confronted farmers and interests generally. In the words of the Secretary of Agriculture, "the Extension Service became the spearhead of the adjustment campaigns". These campaigns, together with other emergency activities, have placed an extremely heavy burden upon the staff, as the added work has been conducted without corresponding increase in personnel. Notwithstanding this fact, remarkably good progress has also been made in the established lines of work. The way in which agents and specialists have been able to carry on their regular tasks and at the same time assume the additional activities is a tribute to both the extension workers and the people of the State. It is an evidence of the sound basis upon which the work is established and the capable leadership which has been developed. It is an evidence, also, of the fact that extension workers become more and more effective as the years go by.

The work during the biennium may be summarized under two major divisions: (1) Activities carried on as adjustment, emergency, or relief measures, and (2) Programs of education and service similar to those carried in former years.

Agricultural Adjustment Activities

Wheat Production Control—One of the most intense educational campaigns ever conducted in the State was carried out in connection with the wheat control program. An effort was made to give every wheat grower an understanding of the situation with respect to wheat and an opportunity to enter into a contract whereby he would receive benefit payments in return for reducing his production of wheat, if he so desired. A brief summary of the results of this campaign is shown in the following tabulation:

| Crop | No. farmers signing contracts | Payments on 1933 crop | Payments to be made on 1934 crop | Approximate payments on two crops |
|-----------|-------------------------------|-----------------------|----------------------------------|-----------------------------------|
| Wheat.... | 7,817 | \$818,000 | \$818,000 | \$1,636,000 |

Due to the extremely diversified character of Maryland agriculture, a great many problems arose with regard to the use of "contract acreage" and both county agents and specialists rendered invaluable service to wheat growers in assisting them to make their adjustments. The task of inspecting acreage and determining compliance was also directed and supervised by the Service.

Corn-Hog Control—Although the program for adjusting production of corn and hogs was not so well adapted to Maryland conditions as the wheat program, it was the aim to give growers a thorough understanding of the situation, the provisions of the contract offered them, and to assist all who desired to cooperate in the program. An intensive campaign of education was conducted in all counties to acquaint producers with the facts involved. The following tabulation gives briefly the results of this campaign:

| Crop | No. farmers signing contracts | Payments to Sept. 13 | Estimated payments to come | Approximate total benefit payments |
|---------------|-------------------------------|----------------------|----------------------------|------------------------------------|
| Corn and Hogs | 2,959 | \$119,291 | \$505,709 | \$625,000 |

Tobacco Adjustment—With the cooperation of leading tobacco growers and officials of the Maryland Tobacco Growers' Association, the Extension Service devoted a great deal of effort to working out with officials of the Adjustment Administration a program for adjusting the production of tobacco. Due to the comparatively limited funds derived from such processing tax as could be levied under the law, it was not possible to go as far in dealing with this important Maryland crop as would be desirable. Nevertheless, the program was pre-

sented to growers in all tobacco growing sections of the State through a thorough campaign of education as to its provisions. Assistance in making out contracts and adjustment of their production was given to those who desired to cooperate in the plan. The following tabulation gives a resume of the results:

| Crop | No. farmers signing contracts | Payments received | Payments to be made | Approximate total payments |
|---------|-------------------------------|-------------------|---------------------|----------------------------|
| Tobacco | 684 | \$35,000 | \$25,000 | \$60,000 |

Special Dairy Activities—Problems associated with various phases of the dairy industry have been practically a continuous issue during the biennium. While there has been no specific program of adjustment, the Extension Service has joined with the dairy interests in dealing with a great many vital problems. Critical situations have existed in each of the three markets which receive the bulk of Maryland dairy products. While it is not possible to set forth definitely the influence of extension workers in keeping conditions as satisfactory as they have been in the dairy industry, it is certain that efforts of the Service at numerous conferences and the contacts which county agents have maintained with producers have been extremely important factors.

Other Adjustment Activities—In addition to the definite campaigns for crop adjustment which have been conducted, a great deal of attention has been given to the situation associated with a number of other important Maryland farm products. Many conferences have been held with leaders in the respective industries and with officials of the Adjustment Administration and much effort has been devoted to assembling and compiling data and information bearing upon the several problems.

Efforts were made to work out a marketing agreement for the benefit of growers of canning crops and the canners of the State. This end has not yet been achieved, but it is believed that progress is being made toward stabilizing conditions in that industry. A similar situation exists with respect to the potato industry; problems connected with acreage and marketing of this crop have been the subject of many conferences and there is prospect that more effective solutions may be developed than have been employed in past years. The Service was instrumental in bringing about the purchase of 121 carloads of Maryland potatoes by the Relief Administration, and similar quotas were purchased in competing territory. This had a wholesome effect upon prices at a time when a stimulus of this kind was greatly needed and added substantially to the income of growers. The Service cooperated in handling the purchase of these potatoes.

Attention was given to market garden crops, particularly spinach and cabbage, but definite marketing agreements for crops of this type have not yet been worked out.

A code for the hatchery industry was developed and the Extension Service has been largely responsible for carrying on the educational work necessary for putting into effect and maintaining the provisions of that code.

Emergency Activities

Farm Credit—Extension workers, especially the county agents, have devoted a large amount of time to assisting farmers who desired to take advantage of the various forms of credit made available through the different branches of the Federal Farm Credit Administration. The Service cooperated vigorously with the Federal Administration in setting up the necessary organization to make available its facilities, and in acquainting farmers with the newly created credit agencies. Assistance was given in organizing Crop Production Credit Associations throughout the State and farmers were aided in making out applications and supplying the required information to obtain various types of loans.

The State Farm Debt Conciliation Committee, appointed by the Governor late in 1933, and similar committees formed in each county, rendered distinct service to a large number of farmers in adjusting their credit problems. The Director of the Extension Service is a member of the State Committee.

Pasturing Relief Cattle—At the urgent solicitation of the Federal Emergency Relief Administration, an effort was made to pasture in Maryland as many as possible of the cattle purchased in the drought areas. Upon request of the State Relief Administrator, the Extension Service assumed the task of placing these cattle on farms where pasture was available and supervising their care while thus located. Under this project, 13,158 head of cattle were placed in Maryland pastures and it is safe to say that as many more could have been cared for in this State had not the project been discontinued on or about September 1. Cooperation was given in distributing these steers to abattoirs and packing plants, as all the meat was canned for relief purposes. It is estimated that the project brought approximately \$75,000 to the State, exclusive of the amounts involved in processing, canning, and distributing the meat.

Sub-Marginal Land Project—With a view to launching a program of better utilization of sub-marginal land in the State, several proposed projects were drawn up, dealing with various areas and various uses for the land involved. Upon advice of officials in Washington, and after conference with the State Forester, soil experts, and members of the State Planning Commission, an area in Garrett County was selected for study and investigation. The area involves about 15,000 acres of

farm land, which is located within or adjacent to the State forest. Project leaders are at work taking options, looking toward the purchase of the poor land and making plans for transfer of farmers to other desirable lands in the county. Tentative proposals are under way for location of wayside picnic grounds, large recreational centers near cities, and the possible selection of another sub-marginal area on the Eastern Shore.

Rural Housing Survey—Responsibility for directing and supervising a Rural Housing Survey in three Maryland counties was placed upon the Extension Service by the Civil Works Administration. Information was obtained from 7,558 rural homes. The cost was borne by the Civil Works Administration and unemployed persons in the counties were used principally in making the survey.

The purpose of this project was to obtain definite information on farm housing conditions and the data collected will serve as a foundation upon which to build a program for improved farm homes. Points covered in the survey included: Construction; Age of House; Condition of Houses; Water Supply and Sewage Disposal; Heating and Lighting; Laundry and Cooking Facilities; and Relative Importance of Repairs and Improvements Wanted.

Educational and Demonstration Activities

Marketing—Additional responsibilities have been placed upon the Extension Service in connection with marketing some of the important products of the State.

Tobacco—Under the tobacco grading law passed by the last General Assembly, it was necessary to train inspectors. A school for this purpose was held and other assistance was given in carrying out the provisions of the new law. Substantial aid was given in solving other problems affecting the marketing phase of the tobacco industry.

Cantaloupe Law—The last General Assembly passed a law looking toward improvement in marketing of cantaloupes by preventing as far as practicable the shipment of green cantaloupes. No funds were provided for enforcement of the Act. However, the State Department of Markets of the Extension Service has done what it could with available forces to carry out the provisions of the Act. This has involved rather intensive campaigns in districts where cantaloupes are grown to acquaint growers with the provisions of the new law and the advantages to be derived from complying with them.

Marketing Sweet Potatoes—A special effort is being made to widen the market for this Maryland product. With the cooperation of the Federal Government, a man has proceeded to England and has office with the U. S. Department's representative in London. Sweet potatoes are being shipped to him with a view to their introduction in England and other European countries. The Extension Service is cooperating

in this activity and also with local agencies in endeavoring to improve the grading and packing of this product for domestic as well as foreign shipment.

Other Marketing Activities—Inspection of fruits, vegetables, eggs, and rabbits, conducted by the State Department of Markets, has handled about the same volume of business as in recent years. Canning crops inspection has tripled, with increasing demand by growers for field demonstrations of grading. There is an increase in poultry certification and an additional service provided in the form of "Record of Performance" work, whereby records are kept under supervision. In the line of seed certification, there is an increase in the potato acreage and territory covered, approximately the same amount of tomato seed and indications of an additional service with seed corn. Work in connection with development of grades for use in buying raw tomatoes and for sweet corn has continued. The Service has also continued to cooperate with the Roadside Market Association by giving supervision to markets of its members.

Crops, Dairy, and Livestock—To mention even the most important results achieved in the innumerable lines of work pertaining to production of field and garden crops, dairy, livestock, and poultry products, fruits and vegetables, forestry, canning crops, ornamental gardening, control of insects and diseases, and other problems arising in the widely diversified agriculture of Maryland would require many times the space available here. Such results are set forth more fully in the annual reports of the Extension Service.

An outstanding feature of the work along crop production lines is the service that has been rendered through examination of soil samples, interpretation of results, and recommendations by our specialists as to methods of soil management and fertilization. In 1932 there were 615 soil samples taken from 161 farms. During 1934 to September 30 the work had expanded to 2,300 samples from about 500 farms.

The most notable feature in livestock work is the increased interest in horses. There have been numerous calls for assistance in selection of draft breeding stock, both purebred and grade, as well as other phases of work connected with horses. One 4-H Colt Club of 32 members was organized, with prospects that four or five such clubs will be organized in the near future.

Significant developments in the dairy field are expansion of herd improvement testing associations and the decided increase in number of boys participating in the judging contests at the Timonium Fair. This shows a substantial growth in the number of boys that were trained in judging.

Requests for information regarding the control of insect pests and for assistance in cases of severe damage have continued to increase.

Demands for service in this line cover a wide field, including pests of crops of various kinds, ornamental plants, animals, and pests of the household. A great deal of educational work in insect control is carried on in conjunction with the regulatory work conducted under the State Department of Horticulture, and the workers are employed jointly.

There is abundant evidence that people in general have greatly increased their interest in ornamental gardening during the period of depression. Demands for assistance have increased constantly.

Work in horticulture has been adapted to conditions under which the majority of orchardists are operating. Emphasis has been placed upon such economic practices as the use of cover crops as a means of soil building, less expense for cultivation, reduction of erosion, and increasing the moisture content of orchard soils.

Activities in the poultry field have had a more or less direct bearing upon practically all of the many phases and problems of this industry. Poor management, resulting in low production and low returns, and lack of coordination of efforts in the industry to improve quality of products and marketing conditions were two problems on which attention was focused. Other problems given much attention were disease and parasite control in both chickens and turkeys.

A striking development of the work in plant disease control is a large increase in the inspection and certification of disease-free potato seed. In 1933 there were 535 acres certified and 700 acres in 1934. This work has virtually created a new industry in Maryland. It has demonstrated that home-grown certified seed will outyield seed from other sections and that the crop can be kept free from disease by proper inspection. Many growers are deriving a substantial income from sale of certified seed for use in this State and other states.

Development of the work with canning crops included considerable expansion to crops other than tomatoes, including peas, beans and corn, together with continuation of the extensive work with tomatoes that has been carried on for a number of years.

Boys' and Girls' 4-H Club Work—Growth in this important field of Extension activity is shown by increased enrollment of boys and girls and an increase in the number and variety of projects carried on by them. The quality of the work done is attested by the creditable showing made by teams and individuals representing this State in national competitions.

The character of projects has been adapted to the changed economic conditions, which means greater emphasis upon and greater interest in projects designed to produce and conserve food at home, making of clothes, renovating old garments, planning low-cost meals, and similar activities. Girls of the 4-H clubs have given substantial help with relief cases in their communities by making garments and preserving fruits and vegetables for those in need. Although the fundamental

purpose of 4-H club work is the development of rural boys and girls, the results of their activities are of real economic importance. A conservative estimate of the value of products produced and conserved by them in the two years would be in excess of a half million dollars.

A significant development of recent years is the activity of older youth, most of whom have experienced several years of club work. Groups of this type are carrying out well-planned programs of work and are furnishing valuable leadership in organizing and conducting 4-H clubs.

Home Demonstration Work—Programs of work for home-makers have dealt with the practical phases of home making, particularly as adapted to the changed economic conditions. The number of women participating, as well as interest in the work, have continued to increase. In addition, there has been a decided trend among the older groups toward a more cultural program. They are interested in music, reading and art. Special reading courses were worked out, with suggestive lists of books. Chorus work was done in the individual clubs, which was an incentive to get together and sing in county choruses. Eight recreational schools were held, four of which were devoted to study of simple dramatics.

Farm and home markets continued to grow in popularity. Approximately \$200,000 was realized from these markets in the last year. In every locality where a market is operated, sales have increased and more women have entered the market to sell. Standards have improved. The funds derived from these markets have paid taxes, taken care of home improvements and clothing for a number of farm families.

Family records of clothing and other budget items have become a popular project for hundreds of farm women, and the business side of home making has assumed new interest. More family gardens and a greater abundance of food preservation are features of the period. It has been a common occurrence for rural people to can whole beeves and hogs with the aid of home demonstration agents and the nutrition specialist.

Many emergency activities have required the attention and services of the agents. They have helped the Red Cross in distributing food, clothing and garden seeds. They have helped at all emergency canning centers that were organized by welfare agencies to can food for those on relief. In all counties there have been demonstrations on low-cost foods given to families receiving welfare funds.

Negro Work—Four Negro workers have been maintained, two men and two women. A man and a woman worker are located on the Southern Eastern Shore and a man and a woman worker are located in Southern Maryland. Regular specialists of the Extension Service give aid in the projects conducted by colored people and the work functions much the same as with the whites. The Eastern Branch

of the University of Maryland, located at Princess Anne, cooperated in activities and assistance was given in holding schools and short courses.

A notable feature of the Negro work was the success achieved in production and preservation of food for home use.

Adult Education—The desire of a large number of people to continue their growth through pursuit of more or less systematic courses of education has become increasingly evident. There is wonderful opportunity for development of this phase of education in the State. It is hoped that facilities in the near future will make it possible to more adequately meet the needs in this field.

Conclusion—This report presents only a very brief summary of some of the most important activities of the Extension Service. A more complete summary is given in the annual report of the Director.

Hearty cooperation has been received from the farmers and farm women of the State; from the farm organizations, the Grange, Farm Bureau, and the various cooperative associations. Appreciation is expressed also for the cooperation of the boards of county commissioners, to Dr. H. J. Patterson and his associates for their assistance, and to the officials in charge of Extension work in the United States Department of Agriculture.

The State Horticultural Department

DR. T. B. SYMONS, *Director*.

THE State Horticultural Department provides definite duties and responsibilities for the State Entomologist and State Plant Pathologist with respect to control of insects and diseases. For purposes of coordination and greater efficiency in administration, the work is placed under the supervision of the Director of the Extension Service.

Report of the State Entomologist.

The personnel engaged in work of this department during the biennium included the following persons: Dr. Ernest N. Cory, State Entomologist; Dr. George S. Langford, Specialist in Insect Control; S. L. Crosthwait and C. Graham, Assistant Entomologists, who were part-time employees. In addition, George J. Abrams had charge of apicultural regulatory and extension work.

Nursery Inspection—Certificates of inspection were issued to 256 firms during 1933 and 235 firms during 1934. Additional inspections of a special nature have been necessary to conform with the requirements of some of the states.

Narcissus bulbs require two inspections annually, one in blooming time and one at digging time, in order that the stock may move interstate. Approximately two million narcissus bulbs were inspected in 1933 and about one million in 1934. Certificates issued covering the movement of bulbs totaled 1,123 in 1933 and 904 in 1934.

Special certificates for movement of small lots of materials by individual shippers were issued to 35 persons in 1933 and to 23 persons in 1934. Special certificates to cover movement of materials to foreign countries, particularly to Canada, totaled 35 in 1933 and 102 in 1934.

This department cooperated also with the Bureau of Entomology and Plant Quarantine in certification of materials on account of the Japanese beetle quarantine. During 1933, 59,616 certificates and permits were issued to permit movement of 663,043 packages consisting of nursery stock, farm products, peat moss and manure; in 1934, to November 1, 33,915 certificates were issued to cover 1,192,910 packages.

Japanese Beetle—Trapping operations constituted the principal work done under this project. In 1933, 8,000 traps were employed in the State and 10,000 in 1934. Most of these were used in an effort to reduce the number of beetles in known infested areas. A small portion was used each year to determine the spread in territories not previously trapped, or in which previous trapping had failed to show presence of the beetle. In 1933 the total beetle catch was 1,471,329 and in 1934 it was 3,636,914 beetles. In the vicinity of Elkton and Colgate there has built up a large beetle population and the bulk of the collections each year was obtained from these localities.

Under the policy that the State has pursued, every effort has been made to check the increase of beetles by trapping, soil treatment and spraying. The money spent by Maryland thus far in control work and in the cooperative maintenance of quarantine has been amply repaid by the business the nurserymen, florists and farmers have been able to carry on without having to conform to the expensive compliance with quarantine regulations. It is felt that progress of the beetle has been definitely retarded. Continuation of all efforts to control or retard the spread of the beetle is especially important at this time.

European Corn Borer—The insect was found in five fields in Worcester County and in one field in Wicomico County in 1932, and in one field in Somerset County in 1934. No commercial damage has been attributed to it thus far, but, in the light of experience in New Jersey the past year, it is reasonable to expect that when the European corn borer becomes thoroughly established, it will do considerable damage. It will be necessary, when commercial damage occurs, to demonstrate control procedure to farmers and funds should be available for such work during the next biennium.

Potato Tuber Moth—No commercial damage of importance to the potato crop on the lower Eastern Shore occurred in 1933 and 1934,

owing to general observance of deep planting, ridging, sanitation and proper harvesting methods. In 1933 an infestation occurred in lower Calvert County; in 1934 the tuber moth occurred in Anne Arundel County, doing some damage to a few commercial plantings of early potatoes and later appeared in the tobacco crop as "the split worm", and upon the suckers following harvest of the crop. Special efforts will be necessary in this section during 1935 to educate farmers to proper method of handling the potato crop to prevent increase of the pest.

Codling Moth—Injury to the apple crop of the State by this insect continues to be of major importance, especially since the ban on spray residues has necessitated, in most cases, a drastic change in the spray program. Orchardists who are equipped to wash their fruit have been able to continue with the full arsenate of lead schedule of sprays, but economic conditions of most orchardists have precluded purchase of washing equipment. Investigations in this and other states and by the Federal Government have failed to provide a satisfactory and economically practical substitute for arsenate of lead. Sanitation methods, and especially the supplementary method of banding the trees with treated bands, has assisted materially in reducing carry-over of the codling moth.

Timing of the spray program was changed immediately upon announcement of the arsenical tolerance and a system of pre-harvest analyses to determine the extent of spray residue has enabled growers to know exactly what to expect with regard to spray residues. With this knowledge, growers having an excess of spray material on their fruits have been able to wash or wipe their fruit and no seizures of Maryland fruit have taken place during the entire period that the spray tolerance has been in force.

Mosquito Work—For two years this department conducted mosquito surveys in cooperation with the Federal Bureau of Entomology to determine the distribution of various mosquitoes. This furnished a satisfactory basis for planning a general mosquito control project under Civil Works Administration funds during the winter of 1933-34. This work was under the supervision of Dr. Cory and Dr. Langford, and Mr. Graham and Mr. Crosthwait supervised the operations. Unemployed labor was utilized in carrying out the work.

This state was allotted 2,048 men and \$365,000 was set aside for the work. A total of 174.1 miles of new ditch was constructed and 29.5 miles of old ditch were cleared, draining a total of 3,334.9 acres. A total of 178,938 man hours was used at a cost of \$90,073.26. Tools, supplies and supervision brought the total expenditure to \$99,150.58 at the time the project was closed. Had the project continued until the full allotment was expended, marked progress in mosquito control would have been achieved. Residents of Ocean City and Chesapeake Beach, the largest areas ditched, testified to a marked reduction in mosquito infestation during 1934.

The public and officials who have become acquainted with the anti-mosquito operations are favorably impressed and are anxious that it continue. Accordingly, an appropriation and an enabling act to provide for anti-mosquito work under the auspices of the counties and directed by the State Entomologist will be sought from the next Assembly.

Pea Aphis Control—During the last three years experiments on control of the pea aphis on the canning crop in Garrett County proved beyond doubt that applications of nicotine and soap could be depended upon to control this pest. Some difficulty has been encountered in determining the exact timing of the sprays to obtain best results, but promising progress is being made.

Apiculture—In addition to the educational work in better beekeeping and the relation of bees to pollination of orchards, Mr. Abrams has conducted the following regulatory work in relation to bee diseases. In 1933, 65 apiaries were inspected, with a total of 1,115 colonies; American foulbrood was found in 7 apiaries. In 1934, 122 apiaries were inspected, with a total of 1,518 colonies, and 51 were found to be diseased.

General Control Work—There has been a constant and increasing demand for information and help in control of many native pests that have appeared in outbreak numbers at various points, or in usual numbers that occur annually. Among these may be mentioned especially the requests for work on insects injuring buildings, particularly termites, powder post beetles, and the old-house beetle.

Report of the State Plant Pathologist.

Most of the activities in Plant Pathology conducted under the State Horticultural Department are regulatory in nature, although certain research and educational extension work is conducted also. The various activities are coordinated under Professor C. E. Temple, who serves as State Plant Pathologist.

Nursery Inspection and Certification—Regular annual inspections for certification, and such other inspections as deemed necessary, have been made of all nurseries in the State, in cooperation with the State Entomologist. With few exceptions, the nurseries are in good physical condition. The depression, however, affected them, especially the ornamental nurseries, more than other agricultural industries. Nurseries producing fruit trees and plants of small fruits appear to be improving, as there has been considerable demand for their stocks. For example, it is estimated that 20,000,000 strawberry plants are shipped annually from one shipping point, Salisbury. It is estimated also that the supply of fruit trees will be exhausted before the planting season begins next spring.

The number of nurseries in the State has been reduced from 256 in 1933 to 235 in 1934, a reduction of 8 per cent. There is now about the same number of nurseries as in 1932, and 86 more than the average during the biennium ending 1930.

Dutch Elm Disease—This disease, which was not known to science until it began to kill the elms in Holland in 1919, has spread to all parts of Europe and to America. More than 7,000 infected trees have been discovered in America during the last four years. Nearly all these trees were within 25 miles of New York City, but there were 8 in Ohio, 4 in Indiana, 1 in Virginia and 1 in Maryland. Their location, with one exception, coincides with the ports of entry of elm logs from Europe, the railroads over which they were shipped, and the veneer factories where they were worked up.

The first diseased logs intercepted in this country were in Baltimore harbor, August 7, 1933. They had been unloaded from a ship and placed on a car to be shipped to an interior veneer factory. Not only were they infected with *Graphium ulmi*, the parasitic fungus which causes the Dutch elm disease, but also with the *Scolytis* bark beetles which are known to be the principal distributing agents of that disease. These logs, therefore, introduced into our State a disease capable of killing all our elm trees and an insect pest capable of rapid and extensive distribution of that disease.

The infected logs were sent immediately to a Baltimore veneer plant, where they were boiled for 56 hours in order to kill all insect and fungus life in them. Late in September of the same year, an American elm tree growing about 400 yards from the harbor developed the Dutch elm disease. This tree stood near the rampart in Fort McHenry. Following definite confirmation of the disease, this tree, which was a foot in diameter and 25 feet tall, was taken down six inches below the surface of the soil and burned.

All of the elms within a mile of Baltimore harbor were examined twice in 1933 and twice in 1934, and practically all other elms in Baltimore and environs have been scouted once each year without finding any trace of the Dutch elm disease, except the one tree reported above. It is planned to continue scouting for the disease in 1935.

In order to keep posted on developments of this disease, the State Plant Pathologist attended a number of meetings. He urged a policy of complete eradication, regardless of cost, and of making this a federal project with sufficient funds to complete the work of eradication in two years. Generous support of research on the disease was favored, so that if eradication failed, there would be information available regarding control or suppression.

White Pine Blister Rust—This disease has become established in Maryland. The fungus parasite which causes blister rust requires two hosts within a few hundred feet of each other to complete its life-cycle. These hosts are the white pines and any species of the genus *Ribes*, which includes all varieties of currants and gooseberries. The parasite

cannot spread directly from one white pine to another white pine. If conditions favor spread of the disease, the tree eventually dies; but if the hosts are separated as much as 1,500 feet, the parasite cannot complete its life-cycle.

Control of the blister rust, therefore, depends on eradication of all currant and gooseberry plants within 1,500 feet of the white pines. When the European black currant, which is more susceptible than other varieties, is involved, the currant-free zone should extend one mile beyond the pines.

Scouting for blister rust in Maryland has been done from time to time for the last fifteen years. Some nurseries and the zones surrounding them were scouted and the *Ribes* plants removed, so that they could meet the requirements for inter-state shipment of white pines. In 1933, Federal Emergency Relief funds became available for eradicating *Ribes* bushes in the State on a large scale. As many as thirty men were used to pull and grub the bushes and to date 1,142,500 wild *Ribes* bushes, mostly wild gooseberries, have been unrooted and hung on trees, rocks, etc., to die. More than 100,000 acres of native white pine forest and adjacent lands have been scouted.

Altogether, 1,088 cultivated *Ribes* plants have been destroyed. In general, it has not been difficult to obtain permission from owners to destroy their cultivated currant and gooseberry bushes, but some 50 cases, with a total of about 350 bushes, still remain to be handled. It is thought that nearly all of these will either remove their bushes or permit them to be removed before the plants become a source of danger next spring. As a last resort, however, some of the bushes may have to be purchased in order to get rid of them, which involves a question of policy that is not yet determined.

The following agencies are cooperating in the blister rust control work: U. S. Department of Agriculture, Federal Relief Administration, State Forestry Department, and State Horticultural Department. According to present plans, aid from emergency relief funds will be cut off next May. If the *Ribes* eradication work is to go on until the more valuable five-leafed pine forests, wood lots, and plantings are protected against blister rust, an appropriation for the purpose should be made. The sum of \$4,000 a year for the next biennium and \$2,000 annually thereafter would be sufficient to complete the *Ribes* eradication work and keep the area free from *Ribes* plants.

Potato Wart—No new cases of potato wart were found during the last two years. The total number of separate tracts or gardens known to be infested is 22. Each year sufficient seed of varieties known to be immune to wart disease was delivered to the owners and tenants to plant these infested gardens. During the coming biennium a resurvey should be made of the environs of each infested garden and of certain other locations.

The regulation of the Canadian government requiring an attached certificate that they are wart-free with every shipment of potatoes from

Maryland into Canada is still in effect. This is a rather ridiculous requirement, since the wart infested areas are quarantined and since there is no wart disease in any commercial-potato-growing area. Explanations have been made, but with no avail.

Root Rot of Strawberry—This disease has increased in severity in recent years and is now so serious in certain locations that growers have appealed for control measures. Preliminary field and laboratory work has been done with a view to learning more about the disease. An experiment station project dealing with this trouble has been approved by Director Patterson and the Office of Experiment Stations. The State Pathologist will continue to cooperate in certain phases of the project, especially those pertaining to control measures, including testing varieties and seedlings for resistance to the various root rot pathogens.

Crimp Disease of Strawberry—Some growers look upon this disease as the worst strawberry disease; others do not consider it serious. However, in 1933, the State of Massachusetts threatened to quarantine against Maryland plants if producers continued to ship infected plants into that State.

Inspections have been made very carefully since that time and a number of blocks of plants of the Blakemore variety have been refused certification. No complaints from other states have been received since the summer of 1933. Careful inspections of strawberry plant beds will be continued and all varieties that have even a trace of crimp will be refused certification.

Boxwood Diseases—Considerable interest has developed in the diseases and the causes of winter injury of boxwood. Requests for service on these subjects have been answered by inspection visits. Tests have been started relative to the cause and control of such troubles and control measures have been recommended. This work will be continued.

Potato Seed Certification—This project, which is a cooperative activity, is in charge of Dr. R. A. Jehle and is reported in his Extension Service Report.

Plant Disease Survey—This is made by all members of the staff interested in diseases of plants. It consists of a close check on development of diseases in all kinds of crops, together with estimates of the damage done, including the location and distribution of each disease. Similar data are obtained in the other states and are sent to the Division of Mycology and Disease Survey of the U. S. Department of Agriculture, where the data are summarized on a national scale and reported back to the cooperating states.

Identification of Diseased Specimens—Hundreds of diseased specimens are received each year for identification and control measures. This service requires more time than any other rendered by the State Pathologist. It is frequently necessary to make laboratory cultures and a laboratory assistant on part time would greatly facilitate this service.

MARYLAND STATE BOARD OF AGRICULTURE

Live Stock Sanitary Service

JAMES B. GEORGE, *Director.*

DURING the two years ending September 30, 1934, the live stock sanitary work in Maryland has been developed and has progressed to a point where we consider contagious and infectious diseases in Maryland well under control and the work toward their eradication well advanced.

We feel that we can show progress in the project of control and eradication of bovine tuberculosis. We wish to call attention to the fact that while this continues to be our main project from the financial standpoint, the expenditure for this work has been greatly reduced. The State has been entirely tested over and in the last year the testing has revealed less than 1 per cent infection in the cattle population of the State. This has brought about a reduction in appropriation for indemnities from \$125,000 a year at the time the work was concentrated in the territories comprising the milk sheds to \$35,000 for indemnities which we are requesting from the Legislature of 1935. As constant vigilance must be exerted to keep the territories clean after the infection has been reduced, Maryland has worked under a plan to have a veterinarian employed by the State, or by the State and county, to investigate and take care of any outbreaks of this disease in his own territory. This plan seems to have worked very satisfactorily, the cooperation of the counties having been of great benefit to the herd owners in making prompt veterinary service available.

Hog cholera is a disease which seems to run in cycles and our records show that this disease has been materially reduced during the past biennium: However, it appears that we are now nearing a period for an outbreak of this disease over the hog raising area, and we have recently found a slight increase in infection here.

Bang's disease control work has been developed during the past two years until we have about fifty Bang's disease free herds in Maryland and a number of herds well on the way toward that objective. This is entirely a voluntary proposition with the herd owners and has been confined mostly to herds of pure bred animals whose owners have been eager to clean up their herds.

The control of diseases among chickens has been one of the projects developed during the past biennium. Considerable progress has been made in this line.

Detailed reports on bovine tuberculosis eradication, hog cholera control, and Bang's disease and chicken disease control follow in this report.

There has been only one serious outbreak of rabies in the State

during the past two years. This occurred on the Eastern Shore and was cleared up with the aid of the health officer and the veterinarians in that section working with this Department. In 1933 one hundred eight animals were examined for rabies, thirteen of which were reported as positive. Of this number seventy-six were examined by an inspector in this Department and twenty-nine by the State Department of Health. In 1934 eighty-seven animals were examined for this disease, three of which were reported as positive by the State Department of Health. That Department examined fifteen animals and our inspector seventy-two.

Maryland has been remarkably free from the contagious and infectious diseases among live stock prevalent in many other States. There were no cases of anthrax reported in 1933 and only one case in 1934. Some cases of blackleg, contagious ophthalmia and hemorrhagic septicemia have been found in certain sections of the State, usually among animals recently shipped into Maryland from other States. The infected animals are treated and results show no alarming spread of the disease. Losses from these diseases have been very slight.

During 1933 and 1934 outbreaks of encephalomyelitis occurred in the counties of the Eastern Shore and Southern Maryland. Investigations of these cases were made by the Live Stock Sanitary Service Laboratory, a detailed statement of which will be found in the report of the Laboratory.

Although we show a report of twelve cases of scabies in 1933 and eight during 1934 a great number of sheep have been dipped by one of our inspectors in order that this disease may not get a hold in the sheep raising territory.

Another activity of the live stock sanitary work is the investigation of animal disease suspects—an activity which is extremely valuable, inasmuch as it provides for early diagnosis and control of disease in positive cases.

Because of the rigid regulations adopted by the various States the preparation of permits for the movement of cattle interstate has been given a large amount of consideration by this Department. It is necessary that each animal be shown on our records as being eligible for shipment into the State to which the owner wishes to make shipment and this investigation is thoroughly made before the papers are issued and the animals shipped.

At the Union Stock Yards in Baltimore, general supervision is exercised over cattle coming into the Yards either to be sent for slaughter or to be consigned to points within the State or to other States. The purpose of this supervision is to see that no spread of disease is brought about by unhealthy cattle going out of the Yards.

The number of steers being brought into Maryland for feeding purposes has increased greatly. These steers are shipped under written permit from this office and it has been found that the trouble caused by the importation of these animals has been negligible.

Owing to the severe drought in certain sections of the United States the Federal Government has purchased a large number of steers to be put on pasture in Maryland. It has been our duty to examine these animals upon their arrival at point of destination, and while they were in some instances emaciated, very little disease has been found among them. The distribution of these steers has been under the care of the State Extension Service, but the inspection of the animals for disease has been made by this Department. In all, about thirteen thousand animals have been imported from the drought area for pasturage in Maryland.

During the past few months of this biennium the Federal Government has inaugurated a plan for the testing of animals for Bang's disease (contagious abortion). A number of herds have been taken under test and the farmers are being advised as to the importance of this project. We expect much progress to be made in the near future in this work.

Bovine Tuberculosis.

Dr. E. B. Simonds, Inspector in Charge of Tuberculosis Eradication, makes the following report for the biennium ending September 30, 1934:

During the biennium all cattle in Maryland have been brought under State and Federal supervision and tested for tuberculosis. Allegany County has been accredited and Calvert, Charles, Garrett, St. Mary's and Talbot counties have been recredited, making in all six accredited counties. There are now under supervision 48,704 herds with 295,524 cattle; 14,398 herds with 186,116 cattle are accredited; 24,843 herds with 79,234 cattle have been once tested and found free of tuberculosis.

The work during the past year has revealed less than 1 per cent infection in our cattle, and when it is remembered that more than 36 per cent infection was found in two counties and that six counties had more than 20 per cent infection on the first test, remarkable progress has been made in eradicating the disease. However, the success of eradicating the infection has, in some instances, brought about a feeling of security among our cattle owners which is not warranted, as it will be necessary to keep retesting our cattle for tuberculosis for a long period of years to fully eradicate the disease and protect the investment the State now has in the work.

On July 19, 1934, work was started in the State in combatting Bang's disease (contagious abortion) with Federal funds provided by Congress, the State cooperating by making the tests at the Live Stock Sanitary Service Laboratory at College Park. There are now three veterinarians, one laboratory assistant, one clerk and five laborers employed by the U. S. Bureau of Animal Industry working on this project.

The law provides that the owner of cattle reacting to the test may receive indemnity from the Federal Government not to exceed \$20.00 per head for grade cattle and \$50.00 per head for pure bred cattle. In addition to this, he receives the entire amount that the cattle bring at slaughter.

Meetings are being held throughout the State in cooperation with the Extension Service so that the cattle owners may be informed about this work and much interest is being shown by them in the project.

All reactors to the tuberculin test are shipped to the Union Stock Yards, Baltimore, where they are sold each day on competitive sealed bids to the highest bidder. This has proved to be a very satisfactory way to dispose of them, as we find that we receive more for them than is paid for the same class of cattle shipped in from other States and disposed of under other plans.

Where reactors are found, the premises must be cleaned and disinfected by the owner, under instructions of the veterinarian making the test, as soon as the condemned cattle are removed for slaughter. It is required that the disinfectant used must be one approved by the United States Bureau of Animal Industry. This work also aids in controlling other diseases.

The States to the north and east of us which buy nearly all of their replacements for their dairy herds, have been buying more cattle each year from Maryland, as our herds are free of tuberculosis and they can buy and ship their cattle from here at less expense than they can from points farther west. All States to which we now ship cattle require that they must pass a negative test to Bang's disease, and it is believed that the work we do in freeing our herds of this infection will act as another inducement to these out-of-State buyers to purchase their replacements here.

The veterinary inspectors employed on tuberculosis eradication and Bang's disease are also used in making investigations of other diseases in their territory such as rabies, para-tuberculosis, anthrax, black leg, encephalomyelitis or any condition that may be a menace to the live stock industry or the public health.

Hog Cholera Control.

Dr. Mark Welsh, Inspector in Charge of Hog Cholera Eradication, makes the following report for the years 1933 and 1934:

The mortality rate for swine lost by the ravages of hog cholera in the last biennium has been reduced to less than 18 hogs per 1,000. At the beginning of this control work, loss to Maryland farmers was approximately 72 per 1,000. It has been amply demonstrated that individual producers can effectively guard their herds against this infection when they understand its cause and mode of entrance to the herd. Evidence that an increasing number are following the sanitary precautions advocated is demonstrated by a lowering of the losses each biennium. For this last period, 660 outbreaks of hog cholera were reported, which is 134 less than the 1930-32 biennium. This is the fewest outbreaks yet reported for such a period. Data compiled again indicates the principal causes of primary outbreaks are the feeding of cholera-infected pork scraps in kitchen refuse and movement of sick or exposed hogs.

The following table shows the causes of outbreaks and the percentage of each.

CAUSES OF HOG CHOLERA

October 1, 1932—September 30, 1934

| Causes | Number Outbreaks | Per cent Total |
|-----------------------------|---------------------|-------------------|
| Tablescraps | 442 | 66.97 |
| Garbage | 100 | 15.15 |
| Loose hogs | 37 | 5.61 |
| New stock | 30 | 4.55 |
| Unknown | 25 | 3.79 |
| Unburied carcasses | 12 | 1.82 |
| Meat carried by dogs..... | 5 | .76 |
| Butcher's offal | 2 | .30 |
| Infected drain water..... | 2 | .30 |
| Infected truck | 2 | .30 |
| Virus on person..... | 1 | .15 |
| Serum-virus treatment | 1 | .15 |
| Stream | 1 | .15 |
| Total..... | 660 | 100.00 |

The preceding table indicates that over 82 per cent of the outbreaks were caused by feeding kitchen refuse containing cholera-infected pork wastes, and that over 10 per cent were due to the movement of sick or exposed hogs. The control of this disease then lies largely in the feeding and care of the herd and is in the hands of individual producers. Spread of infection from primary centers increased to over 8 per cent for this biennium. This is perhaps accounted for by the large increase in persons keeping two to four hogs for home consumption. Many of these new producers had little if any experience in the feeding and management of swine. Sick animals were often turned out of the pen or lot to unwittingly spread their ailment to neighboring hogs. Interested cooperators and veterinarians were of great help, and their early reports of swine sickness undoubtedly did much to prevent more serious spread of infection.

OUTBREAKS BY COUNTIES

October 1, 1932—September 30, 1934

| Counties | No. out- breaks | Counties | No. out- breaks |
|--------------------|--------------------|-----------------------|--------------------|
| Allegany | 2 | Kent | 41 |
| Anne Arundel | 53 | Montgomery | 45 |
| Baltimore | 20 | Prince George's | 31 |
| Calvert | 12 | Queen Anne's | 27 |
| Caroline | 34 | St. Mary's | 38 |
| Carroll | 8 | Somerset | 18 |
| Cecil | 28 | Talbot | 29 |
| Charles | 23 | Washington | 38 |
| Dorchester | 37 | Wicomico | 38 |
| Frederick | 39 | Worcester | 82 |
| Garrett | 1 | | |
| Harford | 5 | Total..... | 660 |
| Howard | 11 | | |

As has been noted in previous reports those counties having a large metropolitan area and considerable non-farm population, usually have an excessive number of outbreaks. Garbage feeding plants often having several hundred hogs, locate in these sections and numerous people keep a few hogs in unsanitary pens or small lots. In both cases, the feed is frequently, if not continually, potentially dangerous of hog cholera infected refuse. Field results indicate both systems of management are seldom profitable and often are prolific centers of disease. In counties essentially rural in character, the Maryland plan for the control of hog cholera has been most effective. Where the simple, inexpensive provisions of this plan are used, it is rare that expensive artificial immunization need be used.

Of the recorded outbreaks, 501 were of the backyard type, i. e., hogs kept in small pens or lots, and 159 occurred on farms where hogs are bred and raised. However, garbage feeding plants were maintained on 17 of these farms, leaving only 142 farms experiencing loss where some degree of care was exercised. This indicates that less than 0.5 of 1 per cent of the farms of Maryland where hogs are bred and raised suffered loss in either 12-month period. The majority of the outbreaks, 579, were primary or new centers of infection; 56 were secondary, or due to spread of the disease, and 25 were of undetermined origin. About 40 per cent of the hogs were either sick or dead at the time of inspection. In several cases, due to financial conditions, home treatment had been prolonged to the point that little assistance could be given. Losses were kept at a minimum when outbreaks were promptly reported.

The following table separates the outbreaks by herd groups:

| Herd groups | Number outbreaks | Per cent outbreaks |
|------------------|------------------|--------------------|
| 5 and under..... | 305 | .... |
| 6 to 9..... | 99 | .... |
| Under 10 | 404 | 61.20 |
| 10 to 19..... | 109 | 16.52 |
| 20 to 39..... | 95 | 14.40 |
| 40 and over..... | 52 | 7.88 |
| Total..... | 660 | 100.00 |

The following is a brief summary of the activities of those engaged in this work:

Meetings attended, 152; addressed, 52; attendance, 12,825.
Interviews, 16,476; farmers, 11,377; vets., 950; others, 4,149.
Farm visits, 7,178; on call, 1,712; voluntary, 5,466.
Hog cholera outbreaks 660; autopsies, 282.
Treatment demonstrations, 8; hogs treated, 255; attendance, 233.
Miles traveled: train, 4,208; other, 144,935; total, 149,143.
Diagnosis: Cholera, 660; other diseases and conditions, 472.

OTHER DISEASES AND CONDITIONS

| Trouble | Number | Trouble | Number |
|------------------------------|--------|-----------------------------|--------|
| Digestive trouble | 148 | Dystocia | 3 |
| Mineral deficiency | 91 | Forage poisoning | 3 |
| Constipation | 35 | Impaction | 3 |
| Gastro-enteritis | 36 | Bronchitis | 2 |
| Parasites | 35 | Dermatitis | 2 |
| Food poisoning | 31 | Heat exhaustion | 2 |
| Pneumonia | 25 | Necrophous infection | 2 |
| Malnutrition | 8 | Pyemia | 2 |
| Injury | 7 | Unknown | 2 |
| Peritonitis | 5 | Anemia | 1 |
| Abscess | 4 | Arthritis | 1 |
| Mastitis | 4 | Botulism | 1 |
| Necrotic enteritis | 4 | Cerebro-meningitis | 1 |
| Tetanus | 4 | Choke | 1 |
| Chronic diarrhea | 1 | Pericarditis | 1 |
| Cirrhosis of liver..... | 1 | Rhinitis | 1 |
| Exposure | 1 | Sodium chloride poisoning.. | 1 |
| Intestinal strangulation.... | 1 | | |
| Lice | 1 | Total..... | 472 |
| Malformation | 1 | | |

Two countries, Canada and Australia, are now reported to have virtually eradicated hog cholera. As in Maryland, both of these found the principal sources of outbreaks were: (1) the feeding of tissues from hogs slaughtered when developing cholera; (2) unrestricted movement of sick or exposed swine; (3) use of virus (the causative agent of hog cholera) in treatment procedures. These active sources of danger, through strict regulation and effective enforcement have, in the two countries mentioned, reduced losses from cholera to the vanishing point. Up to the present, Maryland results have been obtained through the cooperation of swine growers, and others interested in preventing the introduction, harboring and spread of this disease. Eradication on individual Maryland farms is practical and economical, but many existing practices would have to be abandoned in this country as a whole before we cease paying heavily for our acknowledged errors in simple sanitation.

To inform Maryland farmers on methods of preventing cholera, and to apprise them of current conditions, three or more articles are written each month, as well as special reports, radio and public addresses on occasion. These written articles have been generously carried by many of the county papers and frequently by agricultural magazines, farm periodicals and veterinary journals.

This work is conducted cooperatively by the Live Stock Sanitary Service of the Maryland State Board of Agriculture, the Extension Service of the University of Maryland, and the Bureau of Animal Industry of the United States Department of Agriculture. The expense is shared about equally by the Federal and State governments. Since the initiation of this work, all field data have been carefully collected and compiled, and results here are stimulating other States to advo-

cate, in whole or in part, the inexpensive and effective methods used. As the population shifts from urban centers to rural areas, many more will have to be instructed in disease control to prevent their individual losses and danger to the community. Also, in many States, few if any restrictions are placed on the movement and sale of cholera-sick or exposed hogs. A certain percentage of these escape the watchful eyes of inspectors and pass into the channels of trade. Until some method is found of preventing such movement of active hog cholera virus in live animals or dressed meat, continual vigilance will be necessary to keep Maryland losses at their present low point.

Livestock Sanitary Service Laboratory.

The work of this Laboratory continued under the direction of Dr. E. M. Pickens, Pathologist and Bacteriologist, until his death on June 13, 1933. An Administrative Committee composed of Drs. R. C. Reed, chairman, L. A. Black and A. L. Brueckner, then carried on the direction until Dr. A. L. Brueckner was appointed Acting Chief in July, 1934. The following is Dr. Brueckner's report:

Funds for the conduct of the work of this Laboratory are made available from the Live Stock Sanitary Service and the Maryland Agricultural Experiment Station, with Federal funds from the Bureau of Animal Industry for some research.

The activities of this Laboratory are directed along lines of diagnosis and research, with a rather close interlocking of these functions. Upon the results of these endeavors are based suggestions for control and eradication of diseases of farm animals and poultry. Field investigations by members of the Staff are an essential part of the work, fostering a clearer understanding of the value of the Laboratory to the practicing veterinarians and stock owners and suggesting needed lines of research.

In the Annual Reports of this Laboratory appear the following figures for diagnoses and examinations on the basis of the various farm animals, and poultry and wild life:

| | 1933 | 1934 |
|-------------------|--------|--------|
| Cattle | 33,496 | 38,174 |
| Horse | 94 | 216 |
| Mule | 2 | 3 |
| Swine | 15 | 23 |
| Sheep | 16 | 30 |
| Goat | 3 | 15 |
| Dog | 97 | 45 |
| Cat | 4 | 1 |
| Rabbit | 10 | 1 |
| Guinea Pig | 143 | 0 |
| Feed | 7 | 16 |
| Chicken | 82,438 | 88,789 |
| Turkey | 119 | 68 |
| Duck | 8 | 4 |
| Goose | 4 | 0 |
| Pigeon | 33 | 14 |
| Guinea Fowl | 7 | 6 |

| | | |
|-------------------|---------|---------|
| Canary | 1 | 1 |
| Quail | 14 | 7 |
| Pheasant | 22 | 14 |
| Peacock | 1 | 0 |
| Wild Turkey | 0 | 3 |
| Parakeet | 0 | 3 |
| Totals..... | 116,534 | 127,433 |

The list presented shows the scope of the diagnostic work as regards the various species. The list of disease conditions met with is rather too extensive for inclusion, but it covers infectious diseases, inflammatory conditions and external and internal parasites. Proof of the absence of infectious disease frequently is of the greatest value to the practicing veterinarians and the owners, whereas the diagnosis of infectious disease furnishes the practicing veterinarian with information of value in treatment of the affected and protection of the well.

The research work and preparation and distribution of certain biological products came directly under the Biological Laboratory of the Agricultural Experiment Station. A report of these activities is included in the report of the Director of the Experiment Station.

The Accredited Herd Plan for Bang's Disease Control and Eradication has been received by the cattle breeders of the State at a rate consistent with economic conditions. Available funds have not permitted a widespread publicity campaign and yet fifty-five herds have been added, thirty-eight more certificates have been issued to herds as Bang's Disease Free and renewals have been made to all but three herds which have had certificates more than one year. Only two other herds have failed to remain eligible after having been certified.

An Accredited Flock Plan for Pullorum Disease Control and Eradication was put into the field. Although the volume of testing for this disease in chickens was more than three times as great as during the previous period, only a small number of flock owners availed themselves of this plan. Two certificates have been issued to flocks as Pullorum Disease Free, which will tend to point the way for the owners of other flocks.

An outbreak of a serious disease of horses and mules occurred during the late summer and early fall months of 1933 and 1934. This disease was diagnosed as equine encephalomyelitis. Appropriate general suggestions for control were made, extensive laboratory investigations were conducted into the cause of the disease and field investigations on methods of transmission and protective and curative properties of antiserum. The preparation of other agents to be used in immunization was also attempted.

In view of these statements concerning the conduct and achievements in our live stock sanitary work, and despite the fact that the appropriations for this work have been decreased in the necessary reduction of all appropriations, we feel that animal disease control work is continuing with satisfactory progress.

Princess Anne Academy

T. H. KIAH, *Principal*.

PROGRESS has been made at Princess Anne Academy during the biennium, though economic conditions and other agencies have caused a decrease in the student enrollment as compared with the last biennium. Total enrollment for 1932-1933 was 32; 23 men and 9 women; for 1933-1934 the enrollment was 41; 29 men and 12 women. The majority of the students in the two years' enrollment were of college grade, the last year of high school work being eliminated at the end of 1933-1934.

The course of study has been further revised and is now in strict accord with Federal policies. Two-year college courses are offered in agriculture and home economics. Since no work in agriculture and home economics of junior and senior collegiate grade is provided for Negroes in Maryland, the sum of \$600.00 has been made available by the Board of Regents for scholarships to institutions offering agricultural and home economics of this level. These scholarships are designed to cover, at least partially, the differential between the cost to a student at Princess Anne Academy and the cost at out-of-State institutions to which they may desire to go.

The agricultural department has for its head an instructor with a master's degree. All others of the teaching staff, except the instructors in carpentry and auto mechanics, are men and women holding at least bachelor's degrees.

Adult short courses have been held annually for giving instruction for one week in farm practice, woodwork, beautification of home-grounds, personal hygiene, home economics, and business English, etc., to adults and the over-school age group of this and neighboring counties. As many as 600 persons have been benefited by this type of program at Princess Anne Academy. The courses have created much interest in the communities. This work is sponsored by the State Extension Service through its local agents, Princess Anne Academy cooperating.

The boarding department has been organized as an integral part of the institution. Creditable improvements both in its management and material arrangements have been made.

The poultry plant, on its new site, has been improved in equipment and in quality of birds. Electric lighting system has been installed since the last biennial report was made. Registered Hampshire, Poland China, Berkshire, and Essex hogs have been purchased for projects in animal husbandry. Among the farm buildings are a substantial and up-to-date corncrib and granary, barns, and a modernly constructed greenhouse.

Some Important Needs:

1. A science building with modern facilities, including a modern, well-equipped library.
2. Such additional class-room and laboratory equipment as is necessary to make the work in the two-year college courses of standard grade.
3. Since the land on the Princess Anne Academy farm is in a low state of fertility, it is imperative that lime and fertilizers be made available as a means of economy in crop and livestock production.
4. Improvement in the dairy herd and better equipment for the animal husbandry work.
5. Proper laying out of the campus with respect to buildings and roads.
6. A gymnasium.

STATEMENT OF RECEIPTS AND DISBURSEMENTS FOR THE YEAR ENDED SEPTEMBER 30, 1933

| | Balance October 1, 1932 | Receipts for the Year | Source of Receipts | | | Disbursements for the Year | Balance September 30, 1933 | Reversion to State Treasury not included in Receipts |
|---|-------------------------------|-----------------------------|------------------------------|--------------------------------|--------------------------------------|----------------------------------|----------------------------------|--|
| | | | State Appro- priations | Federal Appro- priations | Student Fees and Miscellaneous | | | |
| EDUCATIONAL: | | | | | | | | |
| Baltimore: | | | | | | | | |
| Central Office..... | \$1,072.08 | \$45,051.09 | \$43,218.15 | ..... | \$1,832.94 | \$45,638.12 | \$485.05 | \$2,862.11 |
| School of Dentistry..... | 9,603.57 | 197,292.79 | 8,750.00 | ..... | 188,542.79 | 184,583.82 | 22,312.54 | 1,250.00 |
| School of Law..... | 2,305.02 | 55,151.66 | 23,338.50 | ..... | 31,813.16 | 48,751.53 | 8,705.15 | 1,491.50 |
| School of Medicine..... | 42,357.27 | 234,237.92 | 35,630.27 | ..... | 198,607.65 | 239,063.07 | 37,532.12 | 2,796.31 |
| School of Pharmacy..... | 4,282.64 | 93,884.93 | 13,625.00 | ..... | 80,259.93 | 83,530.41 | 14,587.16 | 1,375.00 |
| Sub-Total..... | \$59,570.58* | \$625,618.39 | \$124,561.92 | ..... | \$501,056.47 | \$601,566.95 | \$83,622.02† | \$9,775.00 |
| University Hospital..... | ..... | 289,259.65 | 60,000.00 | ..... | 229,259.65 | 289,093.65 | 166.00 | ..... |
| Total..... | \$59,570.58 | \$914,878.04 | \$184,561.92 | ..... | \$730,316.12 | \$890,660.60 | \$83,788.02 | \$9,775.00 |
| College Park: | | | | | | | | |
| Administration, Education, and Plant Maintenance..... | —39,188.58 | 836,461.28 | 332,047.44 | \$17,931.31 | 486,482.53 | 829,455.74 | —32,183.04 | ..... |
| Earning Departments..... | 19,753.58 | 96,239.34 | ..... | ..... | 96,239.34 | 95,351.52 | 20,641.40 | ..... |
| Collected for use of Athletics and Other Student Activities..... | ..... | 62,973.93 | ..... | ..... | 62,973.93 | 62,973.93 | ..... | ..... |
| Total..... | —\$19,435.00 | \$995,674.55 | \$332,047.44 | \$17,931.31 | \$645,695.80 | \$987,781.19 | —\$11,541.64 | ..... |
| Princess Anne: | | | | | | | | |
| Princess Anne Academy (Negro)..... | 7,785.23 | 33,987.49 | 24,735.00 | 2,125.00 | 7,127.49 | 38,628.41 | 3,144.31 | 1,385.00 |
| Total—Educational..... | \$7,785.23 | \$33,987.49 | 24,735.00 | 2,125.00 | 7,127.49 | 38,628.41 | 3,144.31 | 1,385.00 |
| Total..... | \$7,785.23 | \$33,987.49 | 24,735.00 | 2,125.00 | 7,127.49 | 38,628.41 | 3,144.31 | 1,385.00 |
| RESEARCH AND EXTENSION: | | | | | | | | |
| College Park: | | | | | | | | |
| Experiment Station Research..... | —\$1,371.97 | \$199,256.62 | \$86,545.00 | \$90,000.00 | \$22,711.62 | \$187,688.30 | \$10,196.35 | \$4,555.00 |
| Agricultural and Home Ec. Extension | 46,984.58 | 303,989.83 | 160,912.11 | 122,302.53 | 20,775.19 | 296,462.64 | 54,511.77 | 3,625.00 |
| Mining Extension..... | —480.00 | 4,020.00 | 2,100.00 | 1,920.00 | ..... | 4,020.00 | —480.00 | ..... |
| Total..... | \$45,132.61 | \$507,266.45 | \$249,557.11 | \$214,222.53 | \$43,486.81 | \$488,170.94 | \$64,228.12† | \$8,180.00 |
| PUBLIC SERVICE AND REGULATORY: | | | | | | | | |
| College Park: | | | | | | | | |
| Fertilizer and Feed Inspection..... | ..... | \$34,154.49‡ | ..... | ..... | \$34,154.49 | ..... | ..... | ..... |
| Seed Inspection, Horticulture, Insect Control, Dairymen's Ass'n and Ad- vanced Registry Testing..... | \$1,812.07 | 56,405.06 | \$51,440.00 | ..... | 4,965.06 | 56,036.34 | \$2,180.79 | \$3,660.00 |
| Baltimore: | | | | | | | | |
| State Department of Forestry..... | 4,670.56 | 116,277.06 | 71,714.00 | \$8,554.81 | 36,008.25 | 105,022.38 | 15,925.24 | 5,397.99 |
| Maryland Geological Survey..... |‡ | 19,493.28 | 18,752.06 | ..... | 711.22 | 17,993.28 | 1,500.00 | 423.22 |
| Maryland Weather Service..... | 30.00 | 2,366.77 | 2,366.77 | ..... | ..... | 2,366.77 | 30.00 | ..... |
| Sub-Total..... | \$6,512.63 | \$228,696.66 | \$144,272.83 | \$8,554.81 | \$75,869.02 | \$215,573.26 | \$19,636.03 | \$9,481.11 |
| State Board of Agriculture: | | | | | | | | |
| Executive Expenses..... | ..... | \$5,842.24 | \$5,842.24 | ..... | ..... | \$4,914.24 | \$928.00 | \$157.70 |
| Live Stock Sanitary Service..... | \$19,729.17§ | 142,708.92 | 142,669.73 | ..... | \$39.19 | 116,866.09 | 45,572.00 | 53,520.22 |
| Sub-Total..... | \$19,729.17 | \$142,708.92 | \$142,669.73 | ..... | \$39.19 | \$121,780.33 | \$46,500.00 | \$53,678.03 |
| Total—Public Service and Regulatory... | \$26,241.80 | \$377,247.82 | \$292,784.80 | \$8,554.81 | \$75,908.21 | \$337,353.59 | \$66,136.03 | \$63,159.23 |
| GRAND TOTAL—ALL DEPARTMENTS..... | \$119,295.22 | \$2,829,054.35 | \$1,083,686.27 | \$242,833.65 | \$1,502,534.43 | \$2,742,594.73 | \$205,754.84 | \$82,499.24 |
| * Baltimore Schools' student fees collected in September but applicable to subsequent year are not included in balances. | | | | | | | | |
| † Liability for unexpended Federal appropriations: \$47,636.14. | | | | | | | | |
| ‡ Other receipts for this department credited to Administrative and Plant Maintenance departments to cover other costs in connection with the Fertilizer and Feed Inspection Service. | | | | | | | | |
| § A balance of \$1,500 for Maryland Geological Survey as of September 30, 1932, reverted to the State Treasury in 1933. | | | | | | | | |
| \$ of the balance brought forward for the Live Stock Sanitary Service from 1932, \$1,618.23 reverted June 10, 1933. The balance is shown net in the statement. | | | | | | | | |

* Baltimore Schools' student fees collected in September but applicable to subsequent year are not included in balances.

† Liability for unexpended Federal appropriations: \$47,656.14.

‡ Other receipts for this department credited to Administrative and Plant Maintenance departments to cover other costs in connection with the Fertilizer and Feed Inspection Service.

§ A balance of \$1,500 for Maryland Geological Survey as of September 30, 1932, reverted to the State Treasury in 1933. The balance is shown net in the statement.

§ Of the balance brought forward for the Live Stock Sanitary Service from 1932, \$1,618.23 reverted June 10, 1933. The balance is shown net in the statement.

UNIVERSITY OF MARYLAND AND STATE BOARD OF AGRICULTURE

STATEMENT OF RECEIPTS AND DISBURSEMENTS FOR THE YEAR ENDED SEPTEMBER 30, 1934

| | Balance October 1, 1933 | Receipts for the Year | Source of Receipts | | | Disbursements for the Year | Balance September 30, 1934 | Reversions to State Treasury not included in Receipts |
|--|-------------------------------|-----------------------------|------------------------------|--------------------------------|-------------------------------|----------------------------------|----------------------------------|---|
| | | | State Appro- priations | Federal Appro- priations | Student Fees Miscellaneous | | | |
| EDUCATIONAL: | | | | | | | | |
| Baltimore: | | | | | | | | |
| Central Office..... | \$485.05 | \$44,470.51 | \$42,539.51 | ..... | \$1,931.00 | \$42,732.12 | \$2,223.44 | ..... |
| School of Dentistry..... | 22,312.54 | 174,042.74 | 1,522.66 | ..... | 172,520.08 | 175,238.76 | 21,116.52 | ..... |
| School of Law..... | 8,705.15 | 48,664.32 | 13,418.68 | ..... | 35,245.64 | 47,444.65 | 9,924.82 | ..... |
| School of Medicine..... | 37,532.12 | 230,382.33 | 17,844.08 | ..... | 212,538.25 | 224,093.97 | 43,820.48 | ..... |
| School of Pharmacy..... | 14,587.16 | 80,151.83 | 5,277.22 | ..... | 74,874.61 | 74,818.36 | 19,920.63 | ..... |
| Sub-Total..... | \$83,622.02* | \$577,711.73 | \$80,602.15 | ..... | \$497,109.58 | \$564,327.86 | \$97,005.89* | ..... |
| University Hospital..... | 166.00 | 323,979.59 | 85,000.00 | ..... | 238,979.59 | 324,145.59 | ..... | ..... |
| Total..... | \$83,788.02 | \$901,691.32 | \$165,602.15 | ..... | \$736,089.17 | \$888,473.45 | \$97,005.89 | ..... |
| College Park: | | | | | | | | |
| Administration, Education, and Plant Maintenance..... | \$32,183.04 | \$801,075.74 | \$222,151.25 | \$79,610.52 | \$499,313.97 | \$740,749.20 | \$28,143.50 | \$467.2 |
| Earning Departments..... | 20,641.40 | 100,801.00 | ..... | ..... | 100,801.00 | 96,066.47 | 25,375.93 | ..... |
| Collected for use of Athletics and Other Student Activities..... | ..... | 54,511.70 | ..... | ..... | 54,511.70 | 54,511.70 | ..... | ..... |
| Total..... | —\$11,541.64 | \$956,388.44 | \$222,151.25 | \$79,610.52 | \$654,626.67 | \$891,327.37 | \$53,519.43 | \$467.2 |
| Princess Anne: | | | | | | | | |
| Princess Anne Academy (Negro)..... | 3,144.31 | 39,008.23 | 15,672.00 | 14,875.00 | \$8,461.23 | \$32,799.83 | \$9,352.71 | ..... |
| Total—Educational..... | \$75,390.69 | \$1,897,087.99 | \$403,425.40 | \$94,485.52 | \$1,399,177.07 | \$1,812,600.65 | \$159,878.03† | \$467.2 |
| RESEARCH AND EXTENSION: | | | | | | | | |
| College Park: | | | | | | | | |
| Experiment Station Research..... | \$10,196.35 | \$162,831.44 | \$54,660.00 | \$90,000.00 | \$18,171.44 | \$163,628.20 | \$9,399.59 | ..... |
| Agricultural and Home Ec. Extension | 54,511.77 | 239,133.51 | 98,722.27 | 122,302.53 | 18,108.71 | 238,242.41 | 55,402.87 | ..... |
| Mining Extension..... | —480.00 | 3,049.50 | 1,632.00 | 1,417.50 | ..... | 2,882.00 | —312.50 | ..... |
| Total—Research and Extension..... | \$64,228.12 | \$405,014.45 | \$155,014.27 | \$213,720.03 | \$36,280.15 | \$404,752.61 | \$64,489.96\$ | ..... |
| PUBLIC SERVICE AND REGULATORY: | | | | | | | | |
| College Park: | | | | | | | | |
| Fertilizer and Feed Inspection..... | ..... | \$31,288.26‡ | ..... | ..... | \$31,288.26 | \$31,288.26 | ..... | ..... |
| Seed Inspection, Horticulture, Insect Control, Dairymen's Ass'n and Ad- vanced Registry Testing..... | \$2,180.79 | 38,279.08 | \$33,060.00 | ..... | 5,219.08 | 37,934.06 | \$2,525.81 | ..... |
| Baltimore: | | | | | | | | |
| State Department of Forestry..... | 15,925.24 | 100,789.20 | 40,290.12 | \$14,647.00 | 45,852.08 | 101,019.71 | 15,694.73 | \$8,460.0 |
| Maryland Geological Survey..... | 1,500.00 | 16,020.92 | 15,065.53 | ..... | 955.39 | 14,436.92 | 3,084.00 | 1,624.4 |
| Maryland Weather Service..... | 30.00 | 2,231.95 | 2,231.95 | ..... | ..... | 2,261.95 | ..... | 578.0 |
| Sub-Total..... | \$19,636.03 | \$188,609.41 | \$90,647.60 | \$14,647.00 | \$83,314.81 | \$186,940.90 | \$21,304.54 | \$10,662.5 |
| State Board of Agriculture: | | | | | | | | |
| Executive Expenses..... | \$928.00 | \$3,379.72 | \$3,379.72 | ..... | ..... | \$4,307.72 | \$32,796.57 | \$220.2 |
| Live Stock Sanitary Service..... | 45,572.00 | 87,849.41 | 87,849.41 | ..... | ..... | 100,624.84 | 32,796.57 | 9,664.5 |
| Sub-Total..... | \$46,500.00 | \$91,229.13 | \$91,229.13 | ..... | ..... | \$104,932.56 | \$32,796.57 | \$9,884.8 |
| Total—Public Service and Regulatory... | \$66,136.03 | \$279,838.54 | \$181,876.73 | \$14,647.00 | \$83,314.81 | \$291,873.46 | \$54,101.11 | \$20,547.3 |
| GRAND TOTAL—ALL DEPARTMENTS..... | \$205,754.84 | \$2,581,940.98 | \$740,316.40 | \$322,852.55 | \$1,518,772.03 | \$2,509,226.72 | \$278,469.10 | \$21,014.6 |

* Baltimore Schools' student fees collected in September but applicable to subsequent year are not included in balances.
† Liability for unexpended Federal appropriations—Educational; ‡ Liability for unexpended Federal appropriations—Research and Extension. \$53,369.98

UNIVERSITY OF MARYLAND AND STATE BOARD OF AGRICULTURE STATEMENT OF RECEIPTS AND DISBURSEMENTS FOR THE BIENNium ENDED SEPTEMBER 30, 1934

| | Balance October 1, 1932 | Receipts for the Biennium | Source of Receipts | | | Disbursements for the Biennium | Balance September 30, 1934 | Reversions to State Treasury not included in Receipts |
|---|-------------------------------|---------------------------------|------------------------------|--------------------------------|--------------------------------------|--------------------------------------|----------------------------------|---|
| | | | State Appro- priations | Federal Appro- priations | Student Fees and Miscellaneous | | | |
| EDUCATIONAL: | | | | | | | | |
| Baltimore: | | | | | | | | |
| Central Office..... | \$1,072.08 | \$89,521.60 | \$85,757.66 | ..... | \$3,763.94 | \$88,370.24 | \$2,223.44 | \$2,862.17 |
| School of Dentistry..... | 9,602.57 | 371,335.53 | 10,272.66 | ..... | 361,062.87 | 359,822.58 | 21,116.52 | 1,250.00 |
| School of Law..... | 2,305.02 | 103,815.98 | 36,757.18 | ..... | 67,058.80 | 96,196.18 | 9,924.82 | 1,491.50 |
| School of Medicine..... | 42,337.27 | 464,628.25 | 58,474.35 | ..... | 111,145.90 | 463,157.04 | 43,820.48 | 2,796.33 |
| School of Pharmacy..... | 4,232.64 | 174,036.76 | 18,902.22 | ..... | 155,134.54 | 158,348.77 | 19,920.63 | 1,375.00 |
| Sub-Total..... | \$59,570.58* | \$1,203,330.12 | \$205,164.07 | ..... | \$998,166.05 | \$1,165,894.81 | \$97,005.89* | \$9,775.00 |
| University Hospital..... | | 145,000.00 | ..... | ..... | 613,239.24 | ..... | ..... | ..... |
| Total..... | \$59,570.58 | \$1,816,569.36 | \$350,164.07 | ..... | \$1,466,405.29 | \$1,779,134.05 | \$97,005.89 | \$9,775.00 |
| College Park: | | | | | | | | |
| Administration, Education, and Plant Maintenance..... | \$39,188.58 | \$1,637,537.02 | \$554,198.69 | \$97,541.83 | \$985,796.50 | \$1,570,204.94 | \$28,143.50 | \$467.21 |
| Earning Departments..... | 19,753.58 | 107,040.31 | ..... | ..... | 197,040.34 | 191,417.99 | 25,375.93 | ..... |
| Collected for use of Athletics and Other Student Activities..... | ..... | 117,485.63 | ..... | ..... | 117,485.63 | 117,485.63 | ..... | ..... |
| Total..... | \$19,435.00 | \$1,952,062.99 | \$554,198.69 | \$97,541.83 | \$1,300,322.47 | \$1,879,108.56 | \$53,519.43 | \$467.21 |
| Princess Anne: | | | | | | | | |
| Princess Anne Academy (Negro).... | \$7,785.23 | \$2,995.72 | \$40,407.00 | \$17,000.00 | \$15,588.72 | \$71,428.24 | \$9,352.71 | \$1,385.00 |
| Total—Educational..... | \$47,920.81 | \$3,841,628.07 | \$944,769.76 | \$114,541.83 | \$2,782,316.48 | \$3,729,670.85 | \$159,878.03† | \$11,627.21 |
| RESEARCH AND EXTENSION: | | | | | | | | |
| College Park: | | | | | | | | |
| Experiment Station Research..... | —\$1,371.97 | \$362,088.06 | \$141,205.00 | \$180,000.00 | \$40,883.06 | \$351,316.50 | \$9,399.59 | \$4,555.00 |
| Agricultural and Home Ec. Extension | 46,984.58 | 542,123.31 | 259,634.38 | 244,605.06 | 38,883.90 | 534,705.05 | 55,402.87 | 3,625.00 |
| Mining Extension..... | —480.00 | 7,069.50 | 3,732.00 | 3,337.50 | ..... | 6,902.00 | —312.50 | ..... |
| Total—Research and Extension..... | \$45,132.61 | \$912,280.90 | \$404,571.38 | \$427,942.56 | \$79,766.96 | \$892,923.55 | \$64,489.96\$ | \$8,180.00 |
| PUBLIC SERVICE AND REGULATORY: | | | | | | | | |
| College Park: | | | | | | | | |
| Fertilizer and Feed Inspection..... | ..... | \$65,442.75‡ | ..... | ..... | \$65,442.75 | ..... | ..... | ..... |
| Seed Inspection, Horticulture, Insect Control, Dairymen's Ass'n and Ad- vanced Quinary Testing..... | \$1,812.07 | 94,684.14 | \$84,500.00 | ..... | 10,184.14 | 93,970.40 | \$2,525.81 | \$3,660.00 |
| Baltimore: | | | | | | | | |
| State Department of Forestry..... | 4,670.56 | 217,066.26 | 112,004.12 | \$23,201.81 | 81,860.33 | 206,042.09 | 15,694.73 | 8,460.00 |
| Maryland Geological Survey..... | † | 35,514.20 | 37,817.59 | ..... | 1,696.61 | 32,430.20 | 3,084.00 | 7,022.41 |
| Maryland Weather Service..... | 30.00 | 4,598.72 | 4,598.72 | ..... | ..... | 4,628.72 | ..... | 1,001.28 |
| Sub-Total..... | \$6,512.63 | \$417,306.07 | \$234,920.43 | \$23,201.81 | \$159,183.83 | \$402,514.16 | \$21,304.54 | \$20,143.69 |
| State Board of Agriculture: | | | | | | | | |
| Executive Expenses..... | 19,729.17¶ | \$3,221.96 | \$9,221.96 | ..... | ..... | \$9,221.96 | ..... | \$378.04 |
| Live Stock Sanitary Service..... | ..... | 230,558.33 | 230,519.14 | ..... | \$39.19 | 217,490.93 | \$32,796.57 | 63,184.86 |
| Sub-Total..... | \$19,729.17 | \$239,780.29 | \$239,741.10 | ..... | \$39.19 | \$229,712.89 | \$32,796.57 | \$63,562.90 |
| Total—Public Service and Regulatory.... | \$26,241.80 | \$637,086.36 | \$474,661.53 | \$23,201.81 | \$159,223.02 | \$629,227.05 | \$54,101.11 | \$83,706.59 |
| GRAND TOTAL—ALL DEPARTMENTS. | \$119,295.22 | \$5,410,995.33 | \$1,824,092.67 | \$565,686.20 | \$3,021,306.46 | \$5,251,821.45 | \$278,469.10 | \$1,003,513.80 |

* Baltimore Schools' student fees collected in September but applicable to subsequent year are not included in balances.

† Liability for unexpended Federal appropriations—Educational; \$37,794.40.

‡ Liability for unexpended Federal appropriations—Research and Extension; \$53,369.98.

§ Other receipts for this department credited to Administrative and Plant Maintenance departments to cover other costs in connection with the Fertilizer and Feed Inspection Service.

¶ A balance of \$1,500 for Maryland Geological Survey as of September 30, 1932, reverted to the State Treasury in 1933.

‡ Of the balance brought forward for the Live Stock Sanitary Service from 1932, \$1,618.23 reverted June 10, 1933. The balance is shown net in the statement.

For the Biennium Ended September 30, 1934

| Balance, October 1, 1932. | Receipts | Disbursements | Balance, September 30, 1934. |
|--|----------------|---------------|------------------------------|
| Balance, October 1, 1932. | \$119,295.22 | | |
| RECEIPTS: | | | |
| State appropriations. | \$1,927,516.47 | | |
| Less: Reversions to State Treasury. | 103,513.80 | | |
| Federal appropriations. | \$1,824,002.67 | | |
| Student fees: | 565,686.20 | | |
| For use of the University. | 1,614,017.93 | | |
| Collected for use of Athletics and other student activities. | 117,485.63 | | |
| Miscellaneous (including University Hospital receipts). | 1,289,802.90 | | |
| Total Receipts | 5,410,995.33 | | |
| Total available for the biennium. | \$5,530,290.55 | | |
| DISBURSEMENTS: | | | |
| Educational: | | | |
| Baltimore (including University Hospital). | \$1,779,134.05 | | |
| College Park. | 1,761,622.93 | | |
| Athletics and Other Student Activities. | 117,485.63 | | |
| Princess Anne. | 71,428.24 | | |
| Total—Educational. | \$3,729,670.85 | | |
| Agricultural Experiment Station Research. | 351,316.50 | | |
| Agricultural and Home Economics Extension. | 534,705.05 | | |
| Mining Extension. | 6,902.00 | | |
| Public Service and Regulatory: | | | |
| State Board of Agriculture. | \$226,712.89 | | |
| Other Departments. | 629,227.05 | | |
| Total Disbursements | 5,251,821.45 | | |
| Balance, September 30, 1934. | \$278,469.10 | | |

UNIVERSITY OF MARYLAND

OFFICIAL PUBLICATION

Vol. 34

March, 1937

No. 3

BIENNIAL REPORT

of the

UNIVERSITY OF MARYLAND

and

STATE BOARD OF AGRICULTURE



UNIVERSITY OF MARYLAND

OFFICIAL PUBLICATION

Vol. 34

March, 1937

No. 3

BIENNIAL REPORT

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UNIVERSITY OF MARYLAND

and

STATE BOARD OF AGRICULTURE

Including a summary of the work of the University of Maryland, the Agricultural Experiment Station, the Extension Service, the State Board of Agriculture, and other branches of work under the jurisdiction of the University and State Board of Agriculture.



Issued monthly by the University of Maryland at College Park, Md. Entered as second class matter under Act of Congress of August 24, 1912.

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BOARD OF REGENTS **and State Board of Agriculture**

| | Term Expires |
|---|--------------|
| W. W. SKINNER, Chairman..... Kensington, Montgomery County | 1945 |
| J. MILTON PATTERSON, Treasurer..... Cumberland, Garrett County | 1944 |
| MRS. JOHN L. WHITEHURST, Secretary..... 4101 Greenway, Baltimore | 1938 |
| W. CALVIN CHESNUT..... Post Office Building, Baltimore | 1942 |
| WILLIAM P. COLE, JR..... Towson, Baltimore County | 1940 |
| HENRY HOLZAPFEL, JR..... Hagerstown, Washington County | 1943 |
| HARRY H. NUTTLE..... Denton, Caroline County | 1941 |
| JOHN E. RAINE..... Towson, Baltimore County | 1939 |
| CLINTON L. RIGGS..... Catonsville, Baltimore County | 1942 |

LETTERS OF TRANSMITTAL

*His Excellency, Governor Harry W. Nice,
and the General Assembly of Maryland,
Annapolis, Maryland.*

Sir and Gentlemen: The Board of Regents of the University of Maryland and the Maryland State Board of Agriculture herewith render a report of the work of the several departments under their jurisdiction for the last two years.

Very truly yours,

W. W. SKINNER,

*Chairman, Board of Regents of the University of Maryland and the
State Board of Agriculture.*

January 10, 1937.

Hon. W. W. Skinner,

*Chairman, Board of Regents of the University of Maryland
and of the Maryland State Board of Agriculture.*

Sir: Herewith is a brief report of the University of Maryland and the Maryland State Board of Agriculture, for the last two years. This report includes all branches of work under each board and includes the period covered in the State's fiscal biennium from September 30, 1934, to October 1, 1936.

Very truly,

H. C. BYRD,

President and Executive Officer.

January 2, 1937.

INTRODUCTION

THIS report for the biennium extending from September 30, 1934, to October 1, 1936 actually is a compilation of reports of Deans,

Directors, and other heads of the various administrative divisions of the University. These reports encompass the College of Agriculture, the Agricultural Experiment Station, the School of Dentistry, the Extension Service, the Live Stock Sanitary Service, the State Feed Fertilizer and Lime Inspection Service, the Department of Forestry, the Geological Survey and Weather Service, the College of Arts and Sciences, the College of Education, the College of Engineering, the College of Home Economics, the School of Law, the School of Medicine, the University Hospital, the School of Nursing, the School of Pharmacy, the Graduate School, the Summer School, the Department of Military Science and Tactics, the Department of Women's Activities, the Library, Department of Physical Education, the Office of Admissions, the Office of the Registrar, the Department of Buildings and Grounds, Princess Anne Academy, and a summary of Income and Expenditures.

The biennium just preceding the biennium for which this report is made was an exceedingly difficult period for the University. The Legislature of 1933 greatly reduced the State appropriations to the University, which, in turn, caused a general reduction in salaries, prevented the purchase of adequate equipment, and resulted in numerous other unfavorable developments. A further reduction in State appropriations in 1935 tended to make the situation more difficult instead of better.

In July, 1935, Dr. R. A. Pearson, who served as President of the University for nine years, resigned and accepted a position in the Department of Agriculture as Coordinator for the Department of the Department's work with the Extension Services of the Land Grant Colleges of the country. Dr. H. C. Byrd, who had served as Assistant to the President and as Vice-President during the entire 9-year period of Dr. Pearson's administration, was designated Acting President, and in February, 1936, was made President.

The decrease in State appropriations led apparently to criticisms that educational standards of the University had been lowered and a complete canvass of all departments of the University resulted, in order that the Board of Regents might ascertain just what was necessary to establish acceptable standards in all departments. This resulted in a not inconsequential reorganization of the educational system, especially in the undergraduate colleges. The effect of these reorganizations and changes are noted in the reports of the separate colleges.

Perhaps the two most noteworthy evidences of progress thus achieved were in the changes in organization, the creation of new departments, and expansion of the College of Arts and Sciences, and in the integration and coordination of various agricultural activities along lines originally laid down in the Charter of 1916, but which had not been theretofore definitely put into effect. This integration involved placing responsibility for agricultural activities in all fields definitely in big subject matter groups.

It is particularly noteworthy that since this integration was effected, considerably more and better work has been done and that attention has been attracted by it to such an extent that other states are attempting to organize their agricultural activities along similar lines.

Improvement in the Library at College Park was another outstanding development of this period.

It is also noteworthy that during this period an era of good feeling between the faculty, the students, and the administration of the University was engendered.

Life among the students in the dormitories, in private dwelling houses and in fraternity and sorority houses, and generally on the campus seems to be eminently satisfactory. In the management of any group of two thousand or more men and women it is expected that difficulties and problems will occur, but most of these problems seem to be less acute in this University than in other universities.

The work in physical training and athletics is on a sound basis and is closely allied with the general health program of the University.

The handling of financial accounts of student organizations is also on a very satisfactory basis. Difficulties in this connection have virtually been eliminated. All student funds and accounts are audited by the State Auditing Department.

One of the outstanding educational developments of the period was the placing of Princess Anne College on a four year basis. Previously it had been operated as a Junior College, which under the scope of the Morrill Act was not satisfactory either to the Federal Government, the State, or to the Negro people that the college was expected to serve.

One of the greatest accomplishments of this biennium for the development of teaching, research, and extension in behalf of the livestock industry was made by a grant from the Federal Government of approximately \$200,000 for the construction of new barns. These barns are not yet completed, but it is expected they will be fully ready for occupancy in the next year.

A new building for the Arts and Science College, largely to house a physics laboratory, classrooms and offices, has been constructed and occupied. A new dormitory for women, which was occupied in the fall of 1935 has alleviated somewhat the demand for living space for women students. The old concrete dairy building has been remodelled to become one of the most attractive buildings on the campus.

This biennium also is noteworthy for the completion of a new University Hospital in Baltimore, with a capacity of 400 beds. An allocation of \$40,000 by the Federal Government has enabled the University to remodel and refurnish the old Hospital for use as a Dispensary.

The Board of Regents considers that the two year period of this biennium is significant in the University's progress and that the achievements of the period have been preeminently satisfactory.

College of Agriculture

H. J. PATTERSON, *Dean*

THE College of Agriculture comprises eleven departments, some of which have several divisions, vis: (1) Agricultural Economics; (2) Agricultural Engineering; (3) Agronomy; Crops and Soils; (4) Animal and Dairy Husbandry; (5) Animal Pathology, Bacteriology and Veterinary; (6) Botany, Plant Pathology and Plant Physiology; (7) Farm Forestry; (8) Farm Management; (9) Entomology and Apiculture; (10) Horticulture: Pomology, Olericulture, Floriculture, and Landscape Architecture; and (11) Poultry Husbandry. Each department conducts some research and extension projects in addition to regular class room and laboratory instruction.

Enrollment in the College of Agriculture in the fall of 1936 shows the greatest increase over previous years that has ever been recorded. Enrollment for the fall semester is 241 while the total for the previous year was 207.

Registration since 1930-31 is shown in the following table:

| | 1930-31 | 1931-32 | 1932-33 | 1933-34 | 1934-35 | 1935-36 | 1936 |
|----------|---------|---------|---------|---------|---------|---------|------|
| Freshmen | 52 | 68 | 58 | 46 | 61 | 70 | 88 |
| Total | 169 | 183 | 200 | 172 | 194 | 207 | 241 |

A particularly encouraging feature of this enrollment is the increased proportion of freshmen who come from farm families. This would indicate that farmers are in a better financial condition and are appreciating the value of a college training.

In addition to students enrolled in the regular agricultural courses, a number are taking special courses. Among these is an increased interest in pre-veterinary work by students who hope to complete work for a degree at a veterinary college.

About one-third of the number of courses offered by the faculty of the College of Agriculture are for graduate students.

The plan which has been in operation for several years, of allowing students wide latitude in elective courses to provide the group of subjects best suited to their needs, has proven satisfactory. More students should be availing themselves of the opportunities which this system offers for training for particular positions or pursuits with profit to themselves and persons or organizations seeking help.

Federal and state emergency projects are continuing to make demands upon the time of faculty members. The Department of Agricultural Economics has assumed a heavy burden in this respect to assist in the farm planning and a land use program. At the present time Mr. Walker is released temporarily to the State Roads Department for the study of certain economic problems. Professor Bruce of the Agronomy Department is on leave of absence to serve as State Director of the Soil Conservation Service. Professor Carpenter of the Department of Agricultural Engineering has served as district engineer for CCC drainage camps on the eastern shore of Maryland and Delaware. In this capacity he has organized and supervised the work program for five camps with their staff of fifty employees and seven hundred enrollees. The Entomology Department has had supervision over the control program of two mosquito camps located on the Eastern Shore.

Continuing the practice of past years some of the students of the College of Agriculture have taken part in the student judging contests at the Eastern States Exposition, the International Dairy Congress, the International Live Stock Show, the Baltimore Live Stock Show, the Eastern States Apple Judging Contest, and other local shows. The judging teams have made very good records, and have been a credit to the University, their instructors, and themselves. These contests give training of inestimable value.

Students of the College of Agriculture maintain a Student Grange, a Live Stock Club, a Dairy Manufacturing Club, Entomology Club, Bacteriology Club, and an honor fraternity, Alpha Zeta. Membership and work in these is voluntary and no college credits are given for work done in them. Much of the training obtained in these clubs is very valuable and students are encouraged to join and take part in these activities.

The Student Grange represents the great national farmers' fraternity of the Order of Patrons of Husbandry, and in their work they

emphasize "Training for Rural Leadership." The Live Stock Club sponsors the fitting and showing contest in the spring. This exhibition is a very creditable and a worthwhile University function. It gives valuable training and inspiration to the students.

Membership in Alpha Zeta Fraternity is chosen from the students in the College of Agriculture after an earnest agricultural motive and leadership ability have been demonstrated. This national organization fosters good scholarship, and to that end awards a gold medal to the member of the Freshman class in agriculture who makes the highest record during the year.

Financial conditions have not permitted the purchase of much new equipment and improved facilities for instruction, yet a few things worthy of note have been added, viz: A constant temperature room for bacteriology; a sound projector and educational films for bacteriology, botany and entomology; microscopes and laboratory tables for bacteriology, botany and entomology; special slides and projector for the Dairy Department; new barns for the Dairy Department; dairy animals, herd of Aberdeen-Angus cattle and Percheron horses.

The development of the Arboretum or plant laboratory will prove a great asset to both the Botany and Horticultural Departments.

The teaching staff has been increased.

The Agricultural Experiment Station

H. J. PATTERSON, *Director*

THE Agricultural Experiment Stations is one of the main service divisions of the University. It is the agricultural research agency of the State which serves the farmers by conducting systematic studies of the numerous problems which confront them. The results show how science can be applied to promoting, preserving and protecting agriculture and thus serve and safeguard the farmer's business which in turn affects the welfare of the whole population. The need for research and the service which it can render was manifested very early by Maryland farmers through the articles published in *The American Farmer*; the records of the Maryland Agricultural Society organized in 1816; the providing for a State agricultural chemist by act of the Legislature in 1847 and by the charter of the Maryland Agricultural College in 1856. The research service for farmers was placed on a real working and substantial

basis through the passage, about 50 years ago, of the Hatch Act (March 2, 1887) making Federal appropriations for the work. The services to be rendered were outlined in Section 2 of the Act as follows:

Sec. 2. That it shall be the object and duty of said experiment stations to conduct original researches or verify experiments on the physiology of plants and animals; the diseases to which they are severally subject, with the remedies for the same; the chemical composition of useful plants at their different stages of growth; the comparative advantages of rotative cropping as pursued under the varying series of crops; the capacity of new plants or trees for acclimation; the analysis of soils and water; the chemical composition of manures, natural or artificial with experiments designed to test the comparative effects on crops of different kinds; the adaptation and value of grasses and forage plants; the composition and digestibility of the different kinds of food for domestic animals; the scientific and economic questions involved in the production of butter and cheese; and such other researches or experiments bearing directly on the agricultural industry of the United States as may in each case be deemed advisable, having due regard to the varying conditions and needs of the respective States and Territories.

The kinds of service rendered by the Experiment Station may be conveniently grouped under the following heads:

1. Solving farm problems through investigations involving original features and initiative.
2. Verification and demonstration tests.
3. Studies of natural agricultural conditions and resources.
4. Research upon which to base methods of inspection, control, standardization and police work.

For the convenient and efficient development and administration of this service and research program the following departments and divisions have been inaugurated:

1. *Agricultural Economics and Farm Management.*
2. *Agricultural Engineering:* Farm buildings, farm drainage, soil erosion, farm machinery and appliances.
3. *Agronomy:* Crops, crop rotations, fertilizers, soils, and land uses.
4. *Animal and Dairy Husbandry:* Breeds and breeding of farm animals; care and feeding of farm animals for production and work; dairy manufacturing, inspection and marketing.
5. *Animal Pathology and Bacteriology:* Animal diseases, inspection and control; farm and home sanitation; bacteriology in relation to foods; legume inoculums.
6. *Botany, Plant Pathology, Plant Physiology:* Identification of plants and their habits and uses, weed control; the chemical and physical factors related to how plants feed and grow; the determination of the cause and remedies for plant diseases, inspection of plants.
7. *Entomology:* Identification of harmful and beneficial insects; control of insects harmful to crops, fruits, animals and man.
8. *Horticulture:* Pomology, olericulture, floriculture, landscape design and gardening.

9. *Poultry Husbandry*: Chickens, eggs, turkeys, ducks, geese, pigeons. Management, housing, feeding, marketing and disease control.
10. *Seed Inspection*: Determination of quality, weed seed, foreign matter, and germination. Plant and crop producing capacity. Value of seed from different sources.

The Experiment Station's research program continues to center in projects which aim to increase yields, improve quality and lower the per unit cost of production of farm produce. It also gives attention to studies of the management, economic and social factors of the farm and the rural community and their relation to other industries. In addition to the usual farm crops, some investigations have been conducted on projects which relate to forestry, wild life and water resources.

The Experiment Station has about 150 research projects in progress (Detailed list in 49th Annual Report of the Experiment Station). Most of these have been taken up in order to solve some problem which was bothering farmers in Maryland. The results of these projects are immediately made available to farmers and all persons interested.

It must also be remembered that research is the foundation upon which all enterprises of the College of Agriculture depend. Effective and up to date college courses and teaching and Extension demonstrations and practices are based upon the truths and results procured through the research of the Experiment Station. Successful and profitable practices of good farms everywhere can be traced either directly or indirectly to the services rendered by the Experiment Station.

Appended herewith is a short abstract of the 32 bulletins issued during the biennium. Seven of these relate to poultry and eleven to live stock. The results which these present have value either for creating, promoting, preserving or protecting farm crops. Some results will aid in solving fundamental problems and establishing basic facts. These results have not only contributed towards increasing the farm income but they are also of value to every citizen by helping to promote higher living standards, increasing the supply and improving the quality of foods.

It is difficult to evaluate the results of research either in money, breadth of application or number of people benefited. A finding which at the moment may seem to have no application or value, often proves of great use and value. It is often difficult and requires a long time to get people to use results which have great potential benefit and value.

The following accomplishments would seem to be worthy of special note in this connection, as they have not been covered in the list of bulletins abstracted.

The Plant Pathology Department has developed, through breeding and selection, some strains of Alaska canning peas which are resistant to disease, more uniform in growth and maturity, and better yielders than the common strains. A large per cent of the Alaska crop grown is from seed of these improved disease resistant strains.

The Agronomy Department has bred a new winter barley which has barbleless awns. It is much better in every respect than any other variety of barley adapted to this State. This variety of barley will be of immeasurable value to dairymen and live stock raisers by making it possible for them to grow more feed. This department has also made valuable contributions to improving strains of tobacco, wheat and sweet corn which produce better quality and higher yields.

The Horticultural Department has developed the "Maryland Golden Sweet" potato which is quoted at 15c to 25c more per bushel than other varieties. Some growers are receiving a still greater differential for fancy and seed stock. A survey shows that one-third of the Maryland crop in 1936 was of the Golden Sweet variety. The total value of this contribution was substantial and worthwhile. In recent years this department has also contributed improved tomato and Irish potato seed.

The Experiment Station in the past has made many contributions which have resulted in a better, more profitable and satisfying farm and rural life.

The Extension Service

DR. T. B. SYMONS, *Director*

THE activities of the Extension Service during the biennium may be summarized in two major divisions: (1) Programs of education and service similar to those carried on in former years; (2) Activities carried on as adjustment, emergency, or relief measures.

As an indication of the extent to which the Extension Service is reaching the people and the demand for the services offered, the following figures may be cited:

More than 30,000 rural families on the 44,000 farms in Maryland were influenced by some phase of Extension work; 24,000 farm and home visits were made by agents in conducting the work; 71,000 office calls and 50,000 telephone calls were made on agents by farmers and their families; agents and specialists participated in 14,844 meetings and demonstrations, having a total attendance of 617,605.

Only a few of the outstanding achievements can be mentioned here, and no attempt is made to include all of the many lines of work carried on and services rendered. Many of the services are conducted in cooperation with other agencies of the University or State, and with the U. S. Department of Agriculture. A more complete summary is given in the annual reports of the Extension Service.

One of the most far-reaching projects in which the Extension Service took the leadership was the development of a program for Maryland agriculture and rural homes during the next five or more years. The various phases of this program were considered thoroughly by rural people at discussion meetings held in their home communities. The recommendations of specialists were included and the final program was considered and approved by State leaders of all farm and rural organizations.

Farm products to the value of more than \$2,000,000 were inspected for certification each year, including fruits, vegetables, live and dressed poultry, eggs, butter, cheese and canning crops. Work in marketing included also demonstrations in harvesting, grading, packing, storing and transportation operations. It sought to develop efficient and economic distribution, assist in development of co-operatives, and promote direct contacts between producers and receivers of farm products. Assistance has been rendered to our various Dairy Cooperatives.

There are approximately 300 homemakers' clubs in the State, each of which carries out one or more programs of instruction under the Extension Service. These include health and nutrition, clothing, home furnishing, home management, and such cultural subjects as reading, public speaking, and music. Through these clubs and other means the work extends to nearly 600 communities annually. Achievement days held in all counties near the end of the year are outstanding events.

Agents reported 24,190 books read by homemakers in the Family Reading Project during 1936.

The Rural Women's Short Course increased in interest and in appeal to the women of the State each year. It has been necessary to limit attendance to approximately 750.

Enrollment has increased in both boys' and girls' 4-H club work and is now approximately 10,000. Among the outstanding results in boys' club work is the development of live stock projects, particularly in the growth of colt clubs and in interest in production phases of live stock in comparison with breeding. There was also distinct expansion of club work into fields not covered in previous years, such as rural electrification, farm record keeping, conservation, etc.

Outstanding features of girls' club work were the achievements of girls in canning, making and remodeling of clothing, and in home furnishing.

Potato diseases were controlled by inspection and certification of seed. Six hundred acres were inspected in 1936, involving 64,392 bushels of potatoes, compared with 47,600 bushels in 1935.

Work on diseases of poultry has increased greatly in 1935, nearly 125,000 birds were tested for Pullorum disease; the number this year will probably exceed 200,000 birds.

Approximately 5,000 dairy cows have been tested monthly under the supervision of the Extension Service. Records of these cows are kept and suggestions are given to their owners with respect to feeding, management and breeding. Supervision is given also to testing approximately 50 herds with a total of about 1,000 cows, in accordance with Advanced Registry and Herd Tests.

A live stock program for Maryland was developed that is more nearly commensurate with the greatly increased interest and growth in that industry. This program is designed to: 1. Utilize home-grown feeds; 2. Afford a regular, steady cash income; 3. Provide a practical means for maintaining soil fertility and crop production.

Extension workers have assisted live stock owners in importation of a large number of purebred horses into the State, as many as 125 in one county, and in establishment of purebred beef herds.

More than 500 plans for farm buildings were sent to individuals each year in response to specific requests.

Sweet corn seed planted in the State was improved by demonstration plantings of seed stocks and varieties.

Approximately 5,000,000 tomato plants were grown each year in cloth-covered coldframes as recommended by the Extension Service, and it is estimated that assistance was given growers in the purchase of 40,000,000 Southern grown plants annually.

Demands for soil tests and recommendations with respect to fertilizers and cropping have more than tripled in the last two years.

Largely at the instigation of the Extension Service, and with its cooperation, a State Committee made a study of the use of Maryland tobacco by visiting a number of cigarette manufacturing plants. Definite recommendations were made and are being carried to the growers.

Through the program of the Agricultural Adjustment Administration, supervised by the Extension Service, more than \$3,500,000 were distributed in benefit payments to Maryland farmers. The

Federal Conservation program, launched early in 1936, will distribute approximately \$1,500,000 to 15,000 farmers who have cooperated in the 1936 program.

The Extension Service cooperated with other agencies in promoting the program of the Rural Electrification Administration in Maryland. It is estimated that in 1936 there will be built in the State more than 250 miles of rural line and more than 2,500 rural customers will be connected. Through rural women's schools 4,000 families were given information pertaining to use of electric equipment.

Extension workers, including county and home demonstration agents have cooperated in carrying out the Rural Rehabilitation program, whereby \$132,000 was loaned to 251 farmers, who were financially involved to the point that unusual help was necessary.

The Extension Service cooperated with the U. S. D. A. in carrying out an extensive drainage demonstration on the Eastern Shore, using CCC labor. As of October 1, 1936, results showed 5,351,780 yards of clearing of ditch channels and banks.

Specialists in Dairy and Animal Husbandry, and especially the county agents, cooperated with Federal and State agencies in a campaign to control Bang's disease of cattle. Approximately 53,000 head of cattle are under supervision and in many herds the disease has been eradicated.

Extension workers, both in the counties and at headquarters, have given assistance to Federal agencies operating in the State, whenever their particular training, position, or understanding of conditions enabled them to render valuable service. Among such agencies are the Emergency Relief Administration, Soil Conservation Service, Land Utilization Service, and the Federal Farm Credit Administration.

The Extension Service has cooperated closely with the farm organizations of the State and has enjoyed their whole-hearted support in its activities. During the last two years assistance was given in strengthening the membership and large numbers of members have been added to practically all farm organizations.

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Closely allied with the Extension Service, is the State Department of Horticulture. In connection with this, the Department of Entomology certifies, in conjunction with the State Plant Pathologist, all plant material moved out of the State. A considerable amount of this certification is done in cooperation with the Bureau of Entomology and Plant Quarantine.

Two-hundred and sixty-nine nurseries were issued certificates, representing the inspection of more than 300 farms. In addition, 3,000,000 narcissus bulbs were inspected and 1,164,211 packages of plant material and 1,955 tons of sand, soil, manure and compost were certified as free from the Japanese beetle, under joint arrangement with the Japanese Beetle Office in Baltimore.

Due to Maryland's policy, the spread of Japanese beetle to nurseries and greenhouses has been relatively slow. Maryland has consistently kept extensions of the quarantined areas to a minimum, thereby saving shippers many thousands of dollars that would otherwise have been spent in compliance with the Federal quarantine, had the area been extended more rapidly.

Improved methods have been developed for control of insects damaging vegetable crops by non-arsenical materials.

More than 400 miles of anti-mosquito ditching have been dug in Worcester County by the personnel of two CCC camps that have been under the technical supervision of the State Entomologist.

In 1935, inspections for brood diseases of bees were made in 211 colonies, and in 528 colonies in 1936.

There is a very serious disease of peach trees in the South, where a million diseased trees have been destroyed. Two phony trees were found in Maryland in 1935 and were destroyed. In 1936 an extensive survey of the peach trees on 1,754 properties with 390,668 trees was made in cooperation with the U. S. Department of Agriculture without finding a tree with phony disease.

Under certain rules and regulations of the State Board of Agriculture, control areas were established which contain the major white pine forests. It was made illegal to possess or bring into these areas any currant or gooseberry plants, which are the alternate hosts of the blister rust fungus. In cooperation with the U. S. Department of Agriculture, 2,407,466 currant and gooseberry bushes were uprooted in the last four years, at a Federal cost of \$42,180.77 and no extra expense to the State. Nurseries with white pine have been protected so that trees could be shipped inter-state. A variety of currant reported to be immune is being tested.

Two years ago, one elm tree had been found in the State with Dutch Elm Disease. Three were found in Brunswick in 1935, and one in Baltimore and another near Cumberland in 1936. Elms along the B. & O. right-of-way were examined in cooperation with the U. S. Department of Agriculture, and only the one diseased tree east of Cumberland was found. Since this tree had been diseased for at least two years, giving an opportunity for the disease to spread, all small elms and the dead wood from all larger elms within one mile were cut and burned. Relief labor was used for this work.

The Brunswick area was scouted again during the last season and no diseased trees were found. All trees with Dutch elm disease are destroyed by burning and there still is hope that the disease may be eradicated from the country.

There are 20 small gardens in the Frostburg-Lonaconing section that are infested with potato wart. They are under quarantine and only immune varieties of potatoes can be grown in them. An effort is being made to have the soils sterilized by chemicals, using relief labor.

Hundreds of plant disease specimens are received each year for identification and recommendations as to control measures.

Boxwood wilt has spread and is causing great damage to boxwood plants of all ages. Owners of estates are especially interested in its control.

A Plant Disease Survey is being made, which includes records and reports on plant diseases of all kinds in the State. One set of these records is filed with the Division of Mycology of the U. S. Department of Agriculture.

Live Stock Sanitary Service

DR. MARK WELSH, *State Veterinarian*

HUMAN health, in many ways, is dependent on animal health and sanitation. Several diseases of animals have been recently recognized as infectious for man and added to the list previously known. Undulant fever may be contracted from cattle, swine and other animals suffering from Bang's disease. Swine erysipelas may be directly spread to man and the virus of swine influenza, according to recent experiments, is identical with human influenza. There is considerable evidence that Periodic Ophthalmia of horses (Moon Blindness) may cause blindness in man. Including tuberculosis, rabies and the above infections, some 25 diseases and conditions of animal origin may seriously affect human health.

The Live Stock Sanitary Service of the State Board of Agriculture is charged with the responsibility of preventing, controlling and eradicating animal disease. This Department is performing a dual service in the protection of human life and in the conservation of our animal resources. Eradication of bovine tuberculosis has been a major objective during the last several years. At the beginning of this project, 30 percent or more of the cattle in several counties were proved to be tubercular. In six of the counties the infection rate had been reduced to 0.5 percent or less and they were accepted

by the Federal Government for accreditation during the previous biennium. In the last two years all counties have been accredited or are acceptable with the exception of two. It is anticipated that work in these two can be completed in the near future and that Maryland herds will be on par with those of the other 45 states that are now wholly accredited.

Bang's disease (Contagious abortion) is a widespread disease of cattle and may infect other animals. On July 1, 1934, Federal funds became available for indemnifying owners who permitted the removal and slaughter of animals reacting to the agglutination blood test. About 1750 pure bred and approximately 5700 grade cattle were slaughtered between the inception of this program and October 1, 1936. Nearly \$300,000 was spent by the Federal Government on indemnifying owners and in operating costs in conducting this work. The State of Maryland cooperated through the laboratory and field facilities of the Live Stock Sanitary Service and during the period previously mentioned brought under supervision approximately 20 percent of the cattle in the State. Unfortunately, however, the net returns to the owner from the Federal indemnity and salvage of the slaughtered animals leaves him with an average loss of approximately \$50 when current prices are paid for replacement stock. Eradication of this disease is a benefit to all people of the State and it would seem that the herd owner at present has to bear a disproportionate share of the loss. It is therefore recommended that an adequate indemnity fund be provided by the State of Maryland to equalize the immediate loss involved in the eradication of this disease.

Encephalomyelitis (Horse disease) which caused serious losses in 1933 and 1934 subsided during the last biennium and only sporadic outbreaks occurred. A serum of considerable worth has been developed which gives temporary protection and is of therapeutic value. Vaccines conferring a longer period of protection have been experimentally used on about 800 Maryland horses. Their results are encouraging but not conclusive.

Periodic ophthalmia (Moon Blindness) is recurrent in horses in certain counties and we are without adequate preventive or curative treatments. A bacterin now prepared in our laboratory appears to be of some value but the whole problem is in need of further investigation. Within the past year, assistance has been extended to horse breeders to determine early pregnancy in mares. As all thoroughbreds have a common birthday of January 1, certain knowledge that conception has taken place is of great value. Injection of blood serum of pregnant mares under examination into virgin rats stimulates pregnancy in the rat, and the test has proved to be about 95 percent efficient. Efforts have been made to increase the services of our laboratories to horse breeders in the previously

mentioned ways as well as in assisting in sterility and breeding problems. The demand is beginning to exceed our present capacity, and it is probable that our personnel and laboratory facilities for this type of work will have to be increased.

Hog cholera control through the employment of sanitary practices and the proper feeding and management of swine herds has continued to keep such losses at a very low level. For several years an average of approximately 450 outbreaks of cholera occurred annually in Maryland and losses average about 70 hogs per thousand, due directly to this disease. For the year 1935, only 214 outbreaks occurred and in 1936 this was further reduced to 143. The individual loss has been reduced to about ten hogs per thousand of the swine population. Swine Erysipelas, however, has occurred in many counties in sporadic outbreaks but losses have not been large and relatively little spread has occurred from infected premises.

A serious outbreak of rabies necessitated the quarantining of all dogs in two western counties during the biennium. These quarantines were enforced at the request of the County Commissioners and were made effective through the splendid cooperation of the County Police Officers and Boards of Health. Records indicate that rabies is spreading in states East of the Mississippi and that its suppression and control is largely dependent on effective enforcement of adequate dog laws. No known cases of rabies now exist within the State, but prompt reporting of suspected cases is imperative to keep it eradicated.

The testing of chickens for Pullorum disease has markedly increased in the past two years. During the 1934 testing season approximately 47,000 birds were examined. In 1935, about 125,000 were blood tested and in 1936, this was increased to nearly 200,000. Unfortunately, this volume of work must be accomplished within about a fourteen week period in the Fall months.

The uncertainty of the demands for this type of blood testing requires considerable flexibility of personnel and funds if the work is to be satisfactorily accomplished. If the present volume of testing increases, additional assistance will be needed. A wide variety of diseases and conditions in poultry flocks have been investigated during the biennium and much assistance given those interested in the industry.

Dairy and breeding cattle to the number of 10,891 were imported into Maryland from 31 different States; 7692 were exported indicating that Maryland breeders are still unable to supply the demand. Public auctions and sale stables are handling large numbers of live stock each year. Insufficient supervision is now maintained over such establishments to preclude the possibility of the sale of diseased live stock. The unrestricted movement of trucks carrying live stock

across State lines is a potent source of danger for the entrance of animals not meeting Maryland requirements. Stockmen and legitimate dealers should be more adequately protected against these sources of danger.

Due to insistant demands and the needs of the work, laboratories have been established in Baltimore and Salisbury, in addition to the diagnostic and research laboratory at College Park. Space for these laboratories is provided by the University in Baltimore and by the County Commissioners of Wicomico County in the Court House at Salisbury. A marked increase in the service resulted. In 1935, approximately 117,000 laboratory diagnoses were made and with the increased facilities in 1936, about 250,000 diagnoses were made, or an increase of nearly 114 per cent. This was effected with no increase in the Live Stock Sanitary Service personnel but with some aid from the Federal Government. In the same period, several staff members of the College Park Laboratory, in addition to their routine duties, have conducted one or more phases of investigational work that should prove of economic value to the State.

It is impossible to anticipate sporadic and epidemic outbreaks of disease. Prompt diagnosis and proper control measures are imperative if losses are to be kept at a minimum. Field veterinarians are indispensable in this service. They also conduct routine testing for tuberculosis, Bang's disease, investigate hog cholera outbreaks and similar duties. Close cooperation is maintained with practicing veterinarians, physicians, public health officials, county agents, leading stockmen and others interested in the control and prevention of disease. It is anticipated that the scope of work of the field veterinarians may be enlarged to include the inspection of locally slaughtered meat, supervision of public sales of live stock and conducting educational work with stockmen on better sanitary practices in the prevention of disease and parasites.

Virtually all of the roughages, grains and grasses of Maryland farms must be transformed into meat, milk, eggs and animal products to be of value. Live stock to act as profitable conversion factors must be free of disease and be kept under sanitary conditions. The field and laboratory forces of the Live Stock Sanitary Service are a major factor in the conservation of our animal resources and act as a first line of defense in the protection of man against disease of animal origin.

Feed, Fertilizer and Lime Inspection Service

DR. L. B. BROUGHTON, *State Chemist*

This Department has assigned to it the enforcement of State Feed, Fertilizer, and Lime Laws. Born of a definite public necessity, these laws continue to be actively enforced because that necessity still exists. In brief, they provide for prevention of the manufacture and sale of adulterated and misbranded products, thus protecting the consumer from economic fraud and the honest producer from illegal competition. While there have been changes in regulatory procedure resulting from more extensive experience in enforcement work, enforcing officials are concerned now, as they were ten years ago, with removing from the trade products found to be in violation of the law, and prosecuting violators of the statutes. Notwithstanding great improvement in the quality of feed, fertilizer, and lime there is, as in every industry, a minority of operators who, through carelessness or deliberation, still are producing misbranded and adulterated products. Continued vigilance is necessary.

In previous reports we have explained in detail the project plan of enforcement. This plan, which need not be repeated at length, is designed to guarantee the highest possible protection to the public with the funds available by concentrating on forms of violation causing the most damage.

The following table will portray in condensed form an outline of our control activities. In the interest of clarity and convenience, this table is grouped under the general sub-heading of the industries controlled:

| | 1935 | 1936 | Total |
|--|------------|------------|------------|
| FEEDS | | | |
| Samples collected by Inspectors | 2381 | 2384 | 4765 |
| Samples forwarded by Maryland residents..... | 294 | 357 | 651 |
| FERTILIZER | | | |
| Samples collected by Inspectors..... | 1472 | 1456 | 2928 |
| Samples forwarded by Maryland residents..... | 164 | 109 | 273 |
| LIME | | | |
| Samples collected by Inspectors..... | 112 | 128 | 240 |
| Samples forwarded by Maryland residents..... | 105 | 63 | 168 |
| | <hr/> 4528 | <hr/> 4497 | <hr/> 9025 |

As the foregoing table shows, 7,933 official samples of feed, fertilizer, and lime were collected and examined. The results of all tests were conveyed in bulletin form to the general public.

Twenty prosecutions were initiated against members of the feed industry for merchandising misbranded and adulterated products. In addition, gratuitous examinations were made upon 1,092 samples which were forwarded by residents of the State. In many cases examinations consisted only of chemical analysis, but a large percentage of the samples analyzed also required supplementary microscopical examination. The number of samples given includes those upon which legal actions were based, as well as those of an informative character collected as a guide for determining the necessity for regulatory operations.

The State Inspection Service recognizes fully the prevalent need, especially at this time, for drastic economy in enforcement operations. Every one of our personnel is concerned about the expenditure of our budget so as to acquire the maximum amount of public protection. Every effort is being made to so employ facilities at our command as to obtain greatest possible dividends in the interests of agricultural commodities.

Department of Forestry

DR. F. K. BESLEY, *State Forester*

The State Department of Forestry, through the State Forester, is charged under the law with the "direction of all forest interests and all matters pertaining to forestry and the forest reserves within the jurisdiction of the State." The work falls in several branches, chief of which are: Forest Protection, involving a state-wide system of protection to all forest lands; assistance to woodland owners in working out their forestry problems and in reforestation; the administration of State Forests and State Parks; the operation of a State Forest Nursery for growing forest planting stock; the administration of the Roadside Tree Law for the protection of trees along public highways and streets of towns; and the carrying forward of an educational program in forestry throughout the State.

In addition to the regular activities, the work for the past two years has been greatly expanded and intensified through the operation of CCC camps.

It is now generally understood that forest management and the successful production of forest products entail forest fire protection as a primary requisite. The Maryland public not only understands more clearly than in the past that forest fires prove an economic loss to them through depletion of timber resources, but they are showing

a keen concern regarding major losses which occur when the forests burn. Increasing population and recent drought periods have made the public realize that destruction of the forest cover is an important factor in the pollution and reduction of community water supplies, as well as too rapid run-off in times of flood. The expenditure of millions of dollars for dredging of harbors and shipping channels constitutes an impressive testimony of the importance of a forest cover in preventing the washing of silt and debris into drainage channels. Recreational demands of an increasing population place a great importance upon the protection of wildlife, game, birds and fish from the destructive influences of forest fires. The burning of rich vegetable material contained in the soil has become apparent through the slow growth of young forests reproducing on burned over areas. Blackened forests and lowered aesthetic appeal have seriously reduced community income from tourist trade and from influx of new residents in certain sections of the State. These are the principle reasons that the Department of Forestry has been made responsible by law for the protection from fire of Maryland's 2,223,000 acres of private, municipal and state-owned woodlands.

An assistant forester is in charge of the forest protection organization with three district foresters directing activities in three districts of the State, assisted by nine district forest wardens; 30 forest fire towers, each manned by an observer; 20 forest guards to respond to fire calls; and 600 forest wardens paid by the hour for fire fighting. Each forest warden is authorized to employ such additional assistance as may be necessary in combatting fires. In the sections of Maryland where public properties are located; the Civilian Conservation camps of the Federal Government have proven a welcome addition to the available man power in protecting adjacent forested areas. Protection of privately owned woodlands more remotely located from public properties, continues to be the primary responsibility of the forest wardens and their assistants.

There were 772 fires in Maryland during 1935 which burned 10,311 acres of forest land, causing property damage of \$26,931. It cost \$4,079.23 for emergency labor in fighting these fires, which expense was paid half by the Counties and half by the State. Of the total number of fires, 172 were controlled partly or entirely by forces from the Civilian Conservation camps, which services it is estimated would have cost the counties and the State \$3,458.57 had the camps not participated. In addition to these emergency services, the State bore the cost of supervision, equipment, telephone service, travel and detection service, amounting to \$39,247.43. Private agencies contributed to the extent \$189.24 in purchase of fire fighting equipment and the Federal Government participated by expending \$10,900.00 for various fire prevention and preparedness facilities. The total cost of forest protection for 1935 was \$57,874.47.

Nineteen hundred and thirty-five was a light fire year insofar as the state-wide record is concerned as 23 per cent fewer fires occurred than in the average year. However, there were sections of the State in which fire conditions were more severe than usual. Fire conditions were generally severe the first two-thirds of the spring fire season and the first third of the fall fire season, but the latter part of both seasons, when fires are usually the most numerous and difficult to control, was relieved by bountiful rainfall, which was particularly helpful in the mountainous section of the State during the early part of May.

The spring fire season opened according to schedule on March 15, with bright sunshine and a maximum temperature of 81 degrees, and became increasingly severe, with but little precipitation. The month of April arrived with an accumulated deficiency in precipitation of 0.89 of an inch. Conditions grew increasingly worse until the period April 12 to 28 when a genuine drought developed in the central and eastern portions of the State, towards the end of which period fire conditions reached a peak and major conflagrations burned hundreds of acres in certain counties bordering the Chesapeake Bay, where adequate man power from civilian conservation camps could not be summoned quickly enough to properly meet the emergency. During the fall season, fires were comparatively numerous, except on the Eastern Shore, until early in November, when frequent rains set in. During the last half of October, a severe outbreak of incendiary fires occurred on Backbone Mountain, in Garrett County, where valiant service was rendered by CCC laborers. The largest fires of the year burned simultaneously on April 27 at Glen Burnie, Anne Arundel County, covering 778 acres, and from Foys Hill to Broad Creek, Cecil County, completely killing 1,865 acres of young forest which had been successfully protected for more than ten years. The largest size of both fires is attributed to inadequate local fire control forces and consequent delay in assembling satisfactory man power.

Great strides were made in 1934 and 1935 in obtaining additional forest protection improvements through work of the CCC camps. Eleven new forest fire towers with telephone connections costing approximately \$25,000 were constructed during the biennium. Nearly 100 miles of metallic circuit telephone line was constructed between the new lookout towers, forest guard stations, and dispatching offices. In Central Maryland, a network of five shortwave radio stations and three mobile broadcasting stations were installed thus providing the means for more rapid report and prompt control of fires. However, these additions to the State's facilities for forest protection are being used very inefficiently and frequently are not manned during periods of fire hazard due to insufficient funds for operation. Budget allotments for repair and replacement of fire

tools have been reduced to such an extent that forest wardens are without tools or their equipment is so poor as to constitute a severe handicap in the arduous task of forest fire fighting. Ever since 1932, the size of the average fire for the year has been larger than the 13½ acre average established in that year, thus reflecting the lowered efficiency due to poor equipment and reduced personnel.

Adequate forest protection, which is generally interpreted as not over one-tenth of one percent of the forest area burned over in any normal year, is Maryland's goal. Instead of moving towards the attainment of our goal, the percentage of area burned has increased since 1933, in which year heavy cuts in the fire protection budget stopped the progress which had been made up until that time. In 1935, .21 per cent of the forest area was burned, or over twice the area permissible under adequate protection with even a greater loss in 1934 and years of less favorable weather conditions than existed in 1935. New lookout towers and other protection facilities have been provided through Federal funds, but State funds are necessary for manning the protection facilities and properly equipping our non-salaried fire control cooperators.

In 1906, when the Forestry Law was enacted, it contained the stipulation that the State Forester "direct the protection and improvement of state parks and forest reserves." This has been carried out and the areas have been developed and protected with the funds available. The following is a table of the areas as of 1936:

STATE FORESTS

| | | |
|--------------------------|--------|-----------------------------|
| Swallow Falls | 4,854 | Garrett |
| Savage River | 16,954 | Garrett |
| Potomac | 8,877 | Garrett |
| Green Ridge | 16,866 | Allegany |
| Cedarville | 3,002 | Prince George's and Charles |
| Doncaster | 1,464 | Charles |
| Elk Neck | 3,762 | Cecil |
| Seth Demonstration | 125 | Talbot |
| Pocomoke | 1,732 | Worcester |
| <hr/> | | |
| 9 State Forests..... | 57,636 | acres |

STATE PARKS

| | | |
|---------------------------|--------|--------------------------|
| Fort Frederick | 189 | Washington |
| Washington Monument | 32 | Washington and Frederick |
| Gambrill | 541 | Frederick |
| Patapsco | 1,065 | Baltimore and Howard |
| Elk Neck | 355 | Cecil |
| <hr/> | | |
| 5 State Parks | 2,182 | acres |
| TOTAL..... | 59,818 | acres |

To these should be added 600 acres of auxiliary state forests and 1,200 acres of auxiliary state park land, which the public is allowed to use for camping. This is an increase over the last biennium of one state forest making nine instead of eight and an increase of two state parks making five. The acreage increase in forests was 7,035 acres and in parks 836 acres. This increase has been through purchase and gift. The Elk Neck area of state forests was donated to the State by the County Commissioners of Cecil County and the other areas were increased through purchase. In the state parks, the Elk Neck tract was willed to the State by Dr. William L. Abbott and the Gambrill State Park area was the gift of the Mayor and Aldermen of Frederick. The purchase of the remaining land was made possible through revenue derived from the forests and parks.

On July 4, 1936, the Washington Monument State Park was officially dedicated with suitable ceremonies. It is estimated that approximately 13,600 people visited the Washington Monument Park from May through September, 1936. During the same period, 94,200 people have visited the Patapsco; 15,340 people Gambrill, and 7,000 people Fort Frederick. No count was kept of those visiting the state forests but they have been used extensively.

The State Department of Forestry, as now set-up under the Board of Regents, University of Maryland, should, under the same Board, be designated as the State Department of Forests and Parks.

The authority of the Board to "make all rules and regulations governing state reserves" (which have been interpreted by the Attorney General to apply to both state forests and state parks) should be given force and effect by providing penalties for violations.

There should be created the position of Superintendent of State Parks, the present Assistant State Forester to be designated as such officer, a job which he has handled successfully for some time, without the title. He would have full charge of the state parks, so as to give them separate administration from the state forests and other activities of the Forestry Department. The desired coordination of the state park and state forest activities which are closely related could be brought about through the State Forester, acting as a sort of executive officer for the Board in dealing with the Department of Forests and Parks.

The state parks division would have its separate budget and personnel, but operating under the same Board as the state forests many economies in administration could be effected and duplication of activities avoided, as compared with a separate park board.

Each park, as soon as it has been developed to a point for intensive use, will require a park superintendent, a man with sufficient education and personality to efficiently administer the area

and facilities. He must be a good public relations man, meet the public and work out the various problems incident to a public recreation area. Such a man to meet the exacting qualifications would command a salary of \$1200 per annum, with a house to live in. During the summer, in order to take care of the crowds that will visit and use these parks, extra men will be required as guards on a part time basis. The small parks and those not yet fully developed for intensive use, can be cared for by park assistants, at a salary of \$720 per annum, with living quarters furnished. In these parks, where there will be extensive summer use, park guards will be required on a part time basis to assist the park assistant.

There will be some revenue from the state parks, but from lack of experience it is not possible to predict what that will be. It is estimated that eventually it will amount to half the cost of operation and maintenance, but any revenues derived for the next two years should be put into improvements.

The administrative set-up for each state forest under the State Forester, will be a forest superintendent, with practical training in forestry to have charge of the protection, development and use of the forest. He will command a salary from \$1000 to \$1200 with living quarters, office and travel expense provided. It is estimated that the sale of products from the forest, in the next two years, will take care of the maintenance of roads, trails and improvement work on the forest itself that may be required.

During the last biennium, a branch State Forest Nursery, comprising eight acres, was established at Sunnyside, about three miles north of the main nursery at College Park. This addition was made necessary for the growing of coniferous seedlings. As the soil at this nursery is much looser, the seedlings in the first year did not suffer from the damping off that they had been subjected to previously. A packing and storage shelter and a water system have been installed with CCC labor and in this new section most of the seedlings are being grown.

The State Nursery does not grow or distribute ornamental stock but confines its operation in growing and distributing at cost small seedlings or transplants for forest planting and windbreak planting, the latter only to bona fide farmers, and also large shade trees for planting only on public highways or on lands of public institutions.

The practice of forestry on private lands has been greatly aided and encouraged by a system of cooperative assistance, begun some 20 years ago and followed since that time.

Because most all of the woodland was in private hands, it was necessary to show the owner on the ground what forestry might be expected to accomplish in his own case so as to induce him to practice it.

Any interested land owner can apply to the Forestry Department and request an examination of his property. This is done with the owner or his agent and the problems are discussed on the ground. A written report is later submitted with recommendations.

If the timber is found to be mature, then a cutting is desirable and if the owner is willing to follow good forestry practice, a marking is undertaken. This consists of selecting the trees to come out and marking them with a blaze about four feet from the ground and another below the stump height. This latter is stamped with the letter "M". The owner furnishes two helpers and the Department a forester. The estimate and value of the marked timber is submitted along with a form contract and a list of prospective buyers. A charge is made for this service to cover the actual expense of the field work.

During the biennium, 49 examinations were made covering 3,904 acres. Twenty of these resulted in markings which comprised 1,855 acres, and in three cases, comprising 447 acres a rough estimate was given.

With renewed activity in the lumber market, these requests have shown a slight upward trend.

The Roadside Tree Law charges the Department of Forestry with the protection of all trees growing within the right-of-way of any public road or along the streets of an incorporated town. Since the law was enacted in 1914, there have been no appropriations to carry on this work, so that it must of necessity be self-supporting. The public service corporations, such as telephone, telegraph and electric light companies, which have wires along the highways, require frequent trimming of trees in order to give the necessary clearance to their wires. This is done under a permit system and requires in each case a competent, specially designated forest warden known as a tree warden. For this service of supervision and inspection, a fee is charged to cover actual costs. There are at present 53 of these specially designated tree wardens in different parts of the State who handle this work.

The Department is cooperating with towns and public institutions of the State in their shade tree problems in making examinations and submitting plans for the planting, care and protection of the trees. There is also maintained by the Department a free service to individuals in the protection and care of their trees from insects and diseases and identification of trees and shrubs from samples submitted.

Interest in roadside planting is still being shown though not so many trees have been planted as in the past biennium. The State

Roads Commission has planted 1,537 trees along approximately 10 miles of roadway. In addition, 3,000 odd trees have been planted by individuals along the highways for the benefit of the public.

The educational activities of the Forestry Department have been, as usual, along the lines of keeping before the people of the State the need for perpetuating and wisely using our great natural resource—the forest.

The Forestry Department has been engaged in the past two years in giving lectures not only to the public but they have also been aiding in the educational program of the various CCC camps in Maryland. These boys are living and working in the forests and their proper care and use is taught to these citizens. They have the chance to see approved methods of management and the destruction following forest fires due to carelessness.

During the biennium, 98 lectures were given by the State Forester and his assistants to schools, colleges, service clubs and other organizations showing the work of the Department and the recreational features of our State Forests and Parks. Of these lectures, 60 were illustrated by lantern slides and moving pictures.

Exhibits have been loaned to various schools and public agencies, and the Department has shown phases of its work at county fairs and other exhibits.

Information on forestry matters is given to other State Departments and the general public, when requested. This activity takes a great amount of time in making special reports, answering inquiries by letter and by holding conferences.

Timely news articles are sent to the public press.

The CCC camps were started in April, 1933, to carry on conservation work primarily on publicly owned lands. This agency has been financed entirely by Federal funds. The work of the CCC has steadily increased until now it is practically doubled and many new projects undertaken. In the beginning, all camps not on Federal land were under the management of the Department of Forestry. However, in the increase of the scope of the work, other State agencies have supervision of some of the camps in the State.

At present, the following is a list of the camps under the Department and the areas upon which they are working or have worked:

- S 51—Potomac State Forest—May 1933 to November 1933, May 1934 to October 1934, July 1935 to April 1937.
- S 52—Savage River State Forest—May 1933 to April 1937.
- S 53—Green Ridge State Forest—May 1933 to April 1937.
- S 54—Cedarville State Forest, Doncaster State Forest, Myrtle Grove State Game Refuge May 1933 to June 1934, November 1934 to May 1935, October 1935 to April 1937.

- S 55—Camp Ritchie, State Sanitarium—May 1933 to August 1933, October 1933 to May 1934.
- S 56—Patapsco State Park—June 1933 to April 1934
- S 57—Frederick City Watershed, State Fish Hatchery, Gambrill State Park—June 1933 to April 1937.
- S 58—Green Ridge State Forest—June 1933 to April 1937.
- S 59—Swallow Falls State Forest—June 1933 to October 1933, May 1934 to April 1937.
- S 60—Savage River State Forest—June 1933 to April 1937.
- S 61—Green Ridge State Forest, Washington County Game refuge—August 1933 to October 1935.
- S 62—Pocomoke State Forest — November 1933 to May 1934, October 1934 to April 1937.
- S 63—Doncaster State Forest, Myrtle Grove Game Refuge—June 1934 to November 1934, June 1935 to October 1935.
- S 64—Baltimore City Watershed—August 1935 to April 1937.
- S 65—Potomac State Forest—August 1935 to April 1937.
- S 67—Swallow Falls State Forest—November 1935 to April 1937.
- S 68—Savage River State Forest—July 1935 to April 1937.
- SP 1—Fort Frederick State Park, Washington Monument State Park—April 1934 to April 1937.
- SP 2—Patapsco State Park, State Forest Nursery, University of Maryland—April 1934 to April 1937.

Procurement Only

- MC 72—Mosquito Control work, Isle of Wight and Sinepuxent Bay area—November 1935 to April 1937.
- MC 73—Mosquito Control work Chincoteague Bay area—November 1935 to April 1937.

The work performed up to October 1, 1936 is summarized as follows:

- 1—Roads, 289 miles
- 2—Trails, 307 miles
- 3—Bridges; foot, horse and vehicle—186
- 4—Telephone lines—207 miles
- 5—Fire breaks on trails—714 miles
- 6—Lookout towers erected—10
- 7—Forest fire activities—18,977 man days
- 8—Stand improvement—26,321 acres
- 9—Mosquito control—8,818 acres

Besides these, there have been numerous picnic areas developed with shelters, tables, etc., on the State Parks and Forests; the Old Fort at Fort Frederick State Park made safe; and the monument at Washington Monument State Park rebuilt. Several administrative structures have also been built.

There is no doubt that the CCC has helped the development of the areas worked on and greatly benefited the people of the State by making them accessible, useable and more attractive.

At present, the program calls for the cessation of work April 1, 1937, but if continued, there should be additional acreages provided for their continued work.

The Geological Survey

DR. E. B. MATHEWS, *State Geologist*

THE Maryland Geological Survey is essentially a bureau of information concerning the mineral resources, maps, underground waters, and many other aspects of the physical features of the State.

Established in 1896, it has been accumulating knowledge for forty years, during which the entire State has been surveyed topographically. The agricultural soils have been studied and their distribution mapped for nearly all of the State. The geological formations and mineral resources have also been studied and mapped.

The information thus accumulated has been distributed by means of county maps, showing roads, surface configuration, geological formations, agricultural soils, and other physical features.

Reports have been issued in three series. The first includes general reports dealing with quite diverse subjects such as the history of mapping of the State, the development of its counties, the occurrences of its mineral resources—coal, clays, building stones, etc., and the underground waters. The second series consists of scientific papers which have presented the areal distribution, fossil content, and mode of formation of the various units from which the geological history of the State is being unraveled. The third series consists of county reports presenting in general and more easily understood form the major facts concerning the physical features of each county. Each volume includes descriptions of the physiography, geology, mineral resources, soils, climate, hydrography, magnetic declination, and forests with maps and numerous local views.

A majority of the counties have been studied and reports have been published, but the application of the knowledge acquired to practical problems frequently requires expert judgment and advice. Much of the present work of the Survey consists in the giving of such service in response to the questions received daily regarding all parts of the State. To keep our information up to date it is necessary to carry on constantly local investigations concerning a wide range of subjects.

The most insistent and widespread subject during the last few years has been the underground waters of the State. To answer these questions satisfactorily requires much more knowledge than we now have, necessitating continuous efforts in the collection of well records and their interpretation.

Another line of activity to which there seems no end arises from trying to keep the county maps up to date. The entire State has been surveyed and county maps have been issued for each county.

The basic facts of hills, valleys, and streams remain fairly constant but the culture including roads, houses, and names of new hamlets is constantly changing. Demands have been made for new editions at least once in five years but this is impossible with our present staff and appropriations. The revising of three counties per year seems to be the limit. This means that new editions of particular counties may not appear more frequently than once in ten or twelve years.

The work of the Survey during the next biennium will include more emphasis on the gathering of statistics necessary to predict the likelihood of securing water at a given spot; the pushing forward of publications of general and county reports; the revision and issuance of new editions of county maps; and the answering of the unending stream of questions regarding the physical features and mineral resources of the State.

The state weather service is operated in cooperation with this department, and, as now organized, conducts its work in cooperation with the United States Weather Bureau, the local Section Director of the latter service serving as meteorologist for the State organization. Under his direction part-time assistants, in accordance with the agreement of cooperation between the State and Federal bureaus, are occupied in reducing the local climatic details of interest to Marylanders to a form where they are more readily available for supplying necessary local information not furnished by the Federal bureau to citizens of the State. The work also involves the maintenance of a series of voluntary observers who report to the central office, where their data are reduced to a form available for local use.

At irregular intervals there is also issued a small pamphlet describing in detail the climate of the State, which is sent to schools and to prospective settlers in the State. The total appropriation is small and naturally little beyond the office compilation of data and occasional visits to the voluntary observers is undertaken.

If the present State Weather Service were abolished and the work was supported only by the Federal bureau we would have a reduction of the climatological stations, now numbering approximately 50, to perhaps 30. We would have less care and inspection of the stations remaining and no well organized State source which gives local details as opposed to the more general Federal office.

The activities of the Baltimore City office would probably be cut one-third at the critical time of the day when forecasts are being telephoned to interested parties and we would not be able to issue any publication portraying the climate of Maryland like our brochure "Our Climate."

The fact that the State is cooperating with the Federal bureau permits the Federal bureau to do many things which it could not do if the State was not showing local interest in the way of local appropriation and cooperation.

The College of Arts and Sciences

DR. THOS. HARDY TALIAFERRO, *Dean*

The growth and activities of the College of Arts and Sciences were set forth in the reports for previous bienniums but a large portion of these reports were devoted to an exposition of the needs of the College as regards Staff, Equipment and Housing. During the past biennium the picture has changed for the better and, while this report (made as of October 1, 1936), shows there is still a need for increases in Staff, Equipment and Housing, emphasis is placed on the growth in each of those items.

In so far as student enrollment is concerned the College continues to develop. For 1934-35 the number was 865 and for 1935-36,—894. For the coming session there is every indication that the number enrolled will approach 1000. Under depression conditions the showing is highly creditable.

Primarily the College is deeply concerned in its own problems, which include the welfare and education of its students; research work when problems arise and time and the funds necessary are provided; the writing of books, pamphlets, etc.; and its own development as an integral part of the University. At the same time, however, it is the great service College for the University. As should be expected, a large portion of the teaching in the other colleges and schools is undertaken by members of its faculty. The graduate school depends upon the college for the development of many of its enrollees. In Baltimore, instruction in the arts and sciences for the schools of pharmacy and dentistry is given by members of its staff. Within its province is the pre-professional training for many students enrolling in the schools of medicine and of law and in the school of nursing.

Under its Aegis the State inspection and regulatory service for fertilizer, feeds and lime has functioned, developed and expanded and has proved a large factor in protecting the interests of the farmer and of others needing this type of service.

So far as time and funds permitted, members of the college staff have participated in adult and in extension education. On request, many of them have appeared as speakers before the various clubs and other social organizations of the State. Further, many musical and dramatic entertainments have been presented for those desiring them.

In the fall of 1935 the College was organized into the lower division for freshmen and sophomores, and for the juniors and seniors into three upper divisions—humanities, natural sciences, social sciences. For each division there has been appointed a

chairman, who administers all strictly divisional matters. The dean (ex-officio member of each division) receives divisional reports from the chairmen and, when necessary, forwards them to the president. These divisions have, in the main, functioned most satisfactorily and through their activities relieved, in large measure, the dean of direct responsibility concerning many details of administration. Their further development is looked forward to with interest, pleasure and pride.

During the biennium there was as usual a number of withdrawals from and replacements in the faculty. In the latter half of 1935 there were a large number of additions to the staff. The number of departments was also increased. The Department of History and Political Science was divided as was the Department of Economics and Sociology, the result being the Departments of History; Political Science; Economics and Business Administration; and Sociology. The Department of Psychology was transferred to the College from the College of Education. The staffs, not only of the newly organized department, but of all the departments, were augmented and strengthened. Among the many replacements and additional appointments the following may be noted:

Professors

T. B. Manny, Ph.D. (Wis.) Head—Sociology
Fritz Marti, Ph.D. (Bern)—Philosophy
Harry Warfel, Ph.D. (Bucknell)—English

Associate Professors

C. S. Joslyn, Ph.D. (Harvard)—Sociology
A. J. Nichol, Ph.D. (Duke)—Economics and Bus. Administration
R. Steinmeyer, Ph.D. (American)—Political Science

Assistant Professors

H. G. Clowes, B.S. (Penn.)—Sociology
Geo. O. S. Darby, Ph.D. (Harvard)—Modern Languages
Ray Ehrensberger, A.M. (Butler)—Speech
Philip Layton, M.B.A. (Harvard)—Economics and Business Administration
Jennie Lorenz, Ph.D. (Columbia)—Speech
M. H. Martin, Ph.D. (J.H.U.)—Mathematics
A. J. Prahl, Ph.D. (J.H.U.)—Modern Languages

Lecturers

N. B. Lasson, Ph.D. (J.H.U.)—Political Science
I. E. McDougale, Ph.D. (Clark)—Balto.—Sociology
M. E. Oatman, Ph.D. (Brookings)—Political Science

Instructors

C. W. Cissel, M.A. (Md.)—Economics and Bus. Administration
B. H. Dickinson, Ph.D. (Chicago)—Physics
J. E. Jacobi, Ph.D. (N.Y.)—Sociology

Andre Liotard, Licence (U. of Paris)—Modern Languages
Arthur Silver, M.A. (Penn.)—History
Wm. Vollbrecht, Ph.D. (Penn.)—History

Assistants

Elizabeth Abbiati, B.A. (Moravian) Temp.—Speech
Rolfe Allen, M.A. (Md.) Temp.—History
Jean Barzhe, A.B. (Calif.)—Mathematics
Paul Brooks, B.S. (Wesleyan, W. Va.)—Chemistry
Jack Bryan, M.A. (Arizona)—English
Homer Carhart, M.S. (S. Dakota)—Chemistry
W. R. Clark, M.A. (G.W.)—Psychology
A. A. Evangelist, M.A. (Penn.)—Modern Languages
Henrietta Goodner, B.A. (American)—Modern Languages
Hugh Heller, M.S. (Rutgers) Temp.—Chemistry
Frank Hoadley, B.A. (American)—English
L. R. Holmes, B.S. (Wesleyan, Conn.)—English
Wm. Horne, B.S. (Md.)—Chemistry
Frank Howard, B.S. (Md.)—Chemistry
C. D. Howell, A.B. (Oberlin) Balto.—Zoology
Frances Ide, B.A. (Goucher)—English
Henry Ingersoll, B.A. (Wash.)—Chemistry
Burridge Jennings, B.A. (J.H.U.) Balto.—Physics
H. F. Kraybill, B.S. (Fra. & Marsh.)—Chemistry
H. Laden, B.A. (Penn.)—Mathematics
Charles Lowe, B.S. (G.W.)—Chemistry
Panos Morphopoulos, Ph.D. (J.H.U.) Balto.—Modern Languages
Leona Morris, A.B. (Goucher)—History
(Mrs.) M. I. Morris, A.M. (Chicago) Temp.—Mathematics
Bernice Pierson, A.B. (Western Res.) Balto.—Zoology
Mabel Platz, Ph.D. (So. Calif.) Temp.—English
James H. Reid, M.A. (American) Temp.—Economics & Bus. Adm.
Andre Simonpietri, Ph.D. (U. of Rome) Temp.—Modern Langs.
Geo. L. Sixbey, M.A. (G.W.)—English
Mildred Skinner, A.B. (Wash.)—English
J. H. Spangler, A.B. (Catawba)—Chemistry
Wm. Stanton, B.S. (Md.)—Chemistry
E. G. Stimpson, M.S. (Md.)—Chemistry
W. D. Stull, M.S. (Middlebury)—Zoology
W. R. Volckhausen, B.A. (College. Inst.)—Mathematics
C. J. Wittler, Ph.B. (Creighton) Temp.—Sociology
J. K. Wolfe, B.S. (Md.)—Chemistry
P. P. Zapponi, B.S. (Wooster)—Chemistry

In several departments, heads have not been appointed since in each case none but the best type of man available is desired and such men are hard to find. The staffs in residence are competent to carry on the educational work in the present stage of development. It is hoped to fill these positions before the end of the session 1936-37.

A marked improvement during the latter part of the biennium has been the purchase of large additions for the libraries of the various departments. These additions were housed partly in the general library and partly in the departmental offices. There is, however, still a marked need for additional volumes, magazines, etc.

Badly needed laboratory equipment was added in the departments of chemistry, zoology, physics and psychology; but a definite need for further equipment exists if adequately equipped laboratories are to be developed.

During the months of November and December 1935 the administrative offices of the College, most of departments in the liberal arts, the department of physics and the laboratories for industrial chemistry were installed in the handsome new building erected for arts and sciences. This afforded great relief as to offices, classrooms and some laboratories but almost immediately the increase in the number of departments and in personnel made it necessary to transform some of the classrooms into offices. With the anticipated future increase in the staff there will be a further demand for additional offices, classrooms and laboratories of which there are not sufficient at the present time.

It is hoped that State appropriations will shortly afford relief. It is desirable that the much needed space be provided through the addition of a wing at the south end of the present building or preferably in an administration building large enough to house, in addition to the administration of the University, at least a portion if not all of the liberal arts faculty. Either of these solutions would make possible the use of a portion of the present building for additional departments of science, for example—zoology. In the interim it is greatly to be desired that all of Morrill Hall be made available for zoology which department in Maryland should be developed as regards animal zoology, marine zoology and physiology.

As to outstanding achievements, the College of Arts and Sciences, from the very nature of its work, has not the same opportunity to attract the type of public notice that some of the other branches of the University seem to have but it stands ready at all times to serve the State and its people in so far as may be within its power.

The Dean takes this opportunity to express on behalf of the Staff and himself the deep sense of appreciation aroused by the efforts of the President to assist the College of Arts and Sciences to improve its work. He also wishes at this time to assure the President of the loyalty and hearty cooperation of the entire staff of the College.

College of Education

DR. W. S. SMALL, *Dean*

The functions of the College of Education are to prepare high school teachers, vocational teachers, high school principals, and supervisory and administrative officers; to supplement the work of the normal schools by providing a curriculum leading to a degree for graduates of the two-year and three-year normal schools, and by providing post normal work in preparation for positions as elementary school principles, special teachers, helping teachers, and supervisors; and to conduct graduate work in the field of Education. The Dean of the College is the Director of the Summer School.

The College was established in 1918 with an enrollment of 14 undergraduate students. In the present year 263 are enrolled. About 85 students registered in other colleges are pursuing curriculums in Education, making a total of about 350 students served by the College of Education.

The undergraduate program which at first was for the preparation of vocational teachers under the Smith-Hughes Vocational Education law, has expanded to meet the demand for preparation of high school teachers of the academic subjects, commercial subjects, industrial arts, music and physical education.

Approximately 600 young men and women have been graduated. More than half of them have taught one year or more in the schools of Maryland. In the present year over 200 are employed, as teachers, principals, supervisors and superintendents. Many have found positions of trust in other states and in higher educational institutions. A number of recent graduates are employed as Educational Advisers in CCC camps; in social work, and in government work. Others are studying for advanced degrees. As an illustration, records of the Department of Agricultural Education, which are very complete, show that about 150 students have been graduated. Thirty-seven are employed as teachers of vocational agriculture in Maryland High Schools; 15, as County Agents and Assistant County Agents in the Extension Service; a few as subject-matter specialists in the Extension Service; 27 in educational work in other states; and about 50 in government work and in commercial and industrial occupations. Thirteen are farmers in Maryland.

Records of graduates of other departments are less complete, but the records of the Department of Home Economics Education show that of 125 graduates, about two-thirds have taught in the schools of Maryland, State or City. In the present year, forty are so employed; three are in the Extension Service; some are teaching in

other states; others are employed in governmental and commercial positions. Many are married and are influential members of their home communities.

The story of other departments is similar but even less complete.

Under a Federal grant the Department of Home Economics Education has conducted for three years a Nursery School. This has served as an observation and practice center for students and as a laboratory for study of child nutrition and child psychology. It has received much favorable notice from the public and in the press.

A program of courses is conducted in the late afternoon and evening in Baltimore for the improvement of teachers in service and to help such teachers and prospective teachers to meet the certification requirements of the City and the State in the fields of Commercial and Industrial Education. It was begun twelve years ago for a small group of industrial teachers. In the present year twenty courses enroll 163 individual students. Ambitious students are thus assisted to meet the requirements for degrees in Commercial Education and Industrial Education. Fifty-two such students, practically all teachers-in-service in Baltimore, have received degrees. They occupy responsible positions as teachers, heads of departments and principals.

For the past three years the College of Education has provided a limited program of evening courses at College Park for teachers in the vicinity. The enrollment, though not large, demonstrates that such a program is a real service to teachers.

In the past ten years a number of ambitious elementary school teachers have satisfied the requirements for a degree and for certification as high school teachers by a combination of summer session, evening and Saturday classes, and attendance in the regular session. A curriculum in elementary education recently set up enables graduates of two and three year normal schools to meet the requirements for a degree in the same manner. Approximately 100 teachers are now working for a degree on this plan. The number will increase in the next three or four years owing to the present requirement of a four year preparation for elementary school teachers. After that the number will decrease, but will be followed by a demand for graduate work in the elementary field.

Slowly but insistently the demand for graduate work in Education has developed. The College of Education has responded to the demand to the extent permitted by its limited staff. In the past ten years the masters' degree has been conferred upon 66 candidates. The demand has increased markedly within the past four years and will increase even more rapidly in the immediate future. The important reasons for this increase are:

1. There is a continuing demand for graduate work for the preparation of high school principals. Twenty-two principals of county high schools and three county superintendents have received the masters' degree from the University. At the present time about 50 students are working (mostly on the summer school plan) for the master's degree with the principalship as their objective.

2. There is a nation-wide movement to require five years of preparation for high school teachers. Though there is no such requirement in our State as yet, it is quite likely Maryland will be caught in this movement. Further, the surplus of qualified high school teachers during the past four or five years has put a premium upon the fifth year of preparation. Increasingly, preference is given by employing officers to applicants with five years of preparation. Similarly, in the matter of promotion, teachers strengthened by advanced study have an advantage. Our own records show an increasing number of teachers in service seeking the Master's degree, because they gain a larger degree of mastery of the subjects they teach and more insight into and understanding of educational problems.

3. Another reason for the increased demand is the requirement in the District of Columbia of a Master's degree for senior high school teachers. A good many teachers in Maryland who mean to qualify for the Washington requirements, as well as some of the younger teachers in Washington, are taking graduate work in the University of Maryland.

4. The demand is now developing for graduate work for the preparation of elementary principals and supervisors. With our present staff we are unable to meet this demand. As indicated above under "Service to Elementary School Teachers and Supervisors" this demand is sure to increase in the near future. We shall be told rather pointedly that the State University should provide facilities for such service, as well as for research service for the schools of the State.

5. Our instructional resources are strained to the limit in taking care of the undergraduate work and the work on the Master's level. We have refused to accept students desiring to work for the doctorate. In the past two years requests have been received from several very capable school men in Maryland for opportunity to work for the doctorate under our auspices. These requests have to be met with the answer that with our present staff this is a responsibility we cannot assume.

Research. In the field of educational research we have similarly been limited by staff and equipment.

Summer School

DR. W. S. SMALL, *Director*

IN the preceding exposition of the service of the College of Education there have been frequent illustrations of the close coordination of the College of Education and the Summer School. It is through this coordination that the faculty of the College provides the programs and the curriculums whereby teachers each year meet certifi-

cation requirements and pursue systematic study towards a degree. In the session of 1936 more than 450 Maryland teachers were in attendance. Fully a third of these are carrying on, from year to year, a systematic program of studies leading to the bachelor's or the master's degree. Included in the 450 were high school principals, elementary school principals, elementary supervisors and attendance officers.

The Summer School serves also the needs of undergraduate college students—some who have to make up deficiencies, others who are ambitious to accelerate their progress; and also of a considerable number of unclassified special students. The following classifications show in numbers, scope and influence the growth of the summer session in the past 14 years.

| GROUP DISTRIBUTION | | 1923 | 1936 |
|---|-----|------|------|
| Undergraduate College Students | 33 | 302 | |
| Elementary School Teachers | 207 | 382 | |
| High School Teachers (Including Principals) | 65 | 245 | |
| All Others | 47 | 148 | |
| TOTAL | | 325 | 1077 |
| GEOGRAPHICAL DISTRIBUTION | | 1923 | 1936 |
| Maryland | 268 | 774 | |
| District of Columbia | 35 | 205 | |
| Other States | 49 | 98 | |

The number of graduate students increased from 30 in 1923 to 252 in 1936, of whom 172 were graduate students in Education.

Parallel with the increase in number and in variety of interests served, there has been steady improvement in the amount, variety and quality of offerings. This applies equally to professional courses in Education and to the programs in the natural sciences, mathematics, the social sciences and the humanities. In the session of 1936 a French School was operated with initial success sufficient to warrant its continuance.

For the past four years the annual State Parent-Teacher Conference has been held during the summer session. This conference, under the direction of the officers of the Maryland State Congress with the cooperation of the Director of the Summer Session, is a form of adult education of significance in that those in attendance are concerned with practical study of school-home-community relations.

In the summers of 1935 and 1936, a three-weeks' conference for the Educational Advisers of the Civilian Conservation Corps of the Third Corps Area has been held at the University. Approximately 150 men from these camps in this area have assembled for systematic and intensive study of the problems confronting them as educational advisers in the Conservation Corps Camps.

College of Engineering

S. S. STEINBERG, *Acting Dean*

THE most important achievement of the College of Engineering during the past biennium was the revision of the engineering courses, which was put into effect at the beginning of the academic year 1936-37. In this revision, greater emphasis than heretofore has been placed on the fundamentals of engineering, and recognition has been given to the fact that the training of engineers must include a knowledge of the sciences which deal with human relations, as well as the essentials of business organization and administration.

At the beginning of the academic year 1936-37, five additional instructors were added to the engineering faculty, consisting of two full-time instructors and three lecturers on a part-time basis. This has enabled us to introduce new courses and permitted the faculty to give greater attention to the needs of the individual student. The additions to the engineering faculty are as follows:

Dr. Arne Wikstrom of Cornell University, Assistant Professor of Electrical Engineering.

G. C. Ernst of Iowa State College, Instructor in Civil Engineering.

H. R. Hall, Chief Engineer, Washington Suburban Sanitary Commission, Lecturer on Municipal Sanitation.

Dr. F. G. Kear, Consulting Radio Engineer, Lecturer on Electrical Communications.

R. S. Dill of the U. S. Bureau of Standards, Lecturer on Heating, Ventilation and Refrigeration.

Effective October 1, 1936, Dr. A. N. Johnson, who served as Dean of the College of Engineering since 1920, was named Dean Emeritus. Professor S. S. Steinberg, Head of the Department of Civil Engineering since 1920, was named Acting Dean to succeed Dean Johnson.

Many developments occurred during the past year which promoted the interests of the student body in the College of Engineering and served to develop better student-faculty relations. These included the establishment of branches of the national engineering societies, which serve to develop the students' professional interests and to promote contacts with practicing engineers; and the organization of the Engineering Student Council composed of student leaders, the purpose of which is to advise with the Dean of the College of Engineering concerning all matters of student interest and to coordinate and direct the public, social and technical activities of engineering students.

Greater attention than heretofore has been given to developing interesting programs of lectures on engineering by practicing engineers. The speakers have been men who are outstanding in the various branches of the profession in the State and the nation.

The expansion of our short wave radio equipment has greatly stimulated student interest in this field of communication. During the past year there was established with headquarters here the University Radio League, composed of student radio societies at a number of universities and colleges. This should serve to link our College of Engineering with other educational institutions throughout the country in exchange of news and promotion of research in radio transmission and reception.

The establishment at the University of the Maryland Mapping Agency, in cooperation with the Maryland State Planning Commission and the Works Progress Administration, has served to concentrate on our campus all information concerning maps of Maryland made by Federal, State, municipal and private engineering organizations. This Agency will be of value to all State engineering and technical organizations interested in mapping. Its purposes are to coordinate the mapping activities of the various State agencies in order to avoid overlapping and duplication of effort, and to develop throughout the State a network of lines and elevations of value to engineers and surveyors for mapping and as basic control for all engineering projects.

Our cooperation with the Maryland State Roads Commission has developed during the past year along many lines. We are planning a two-week short course for highway engineers and inspectors for the Commission to be given at the University commencing February 1, 1937. We are cooperating with the Commission in a research program for the study of concrete rigid frame bridges to be undertaken during the coming summer.

The Mining Extension courses conducted in the western part of the State, in cooperation with the Maryland State Bureau of Mines, the State Board of Education and the Boards of Education of Allegany and Garrett Counties, have been continued. The value of these courses is evidenced by the increased earnings of those who attend, as well as the fact that the mine accident rate among students is considerably lower than among men not attending the classes.

The short course for volunteer firemen of the State, conducted in cooperation with the Maryland Volunteer Firemen's Association has been continued with increasing attendance and interest. The value of these courses in safeguarding life and property throughout the State is reflected in the decreasing fire losses from year to year.

In recognition of the importance of the proper operation of sanitary engineering facilities in the cities and towns of the State, there was offered for the first time last year a short course for operators of water works and sewage disposal plants. This course was given in cooperation with the Maryland State Department of Health and the Maryland-Delaware Water and Sewerage Association.

Recently there has been transferred here the Davis Library of Highway Engineering established by Dr. Charles H. Davis, President of the National Highways Association. This is the outstanding library of its kind in the world. The many books, periodicals, pamphlets, and reports included in this library cover all phases of highway engineering, transportation and traffic control. It contains rare books of historic interest in highway development. The library will be of great value for research, as well as for undergraduate instruction.

The Davis Library will be the nucleus about which it is planned to establish the Institute of Transport whose purpose it is to coordinate by cooperation and research the various organizations in this country engaged in transportation. The American Road Builders' Association, representing the highway industry and profession, has already accepted membership in the Institute.

Finally, during the past year, recognition has been given to the fact that one of the supreme responsibilities of the College of Engineering is to render direct service to the industries of the State; not only in new courses and curricula, but also in the maintenance of technical investigations in our laboratories, the results of which may be of direct benefit to the industries and citizens of the State.

The Graduate School

DR. C. O. APPLEMAN, *Dean*

THE achievements of the Graduate School can be judged only in connection with its general functions and purposes. The Graduate School was established when the institution assumed the functions of a true university and thereby the responsibility for instruction at all levels of higher education as well as for the creation of knowledge in fields other than agriculture. The Graduate School has general jurisdiction over the graduate work of the entire university. It also establishes and administers the general requirements for advanced degrees.

In recent years there has been a great increase in the demand for instruction on the graduate level, not only at the University of Maryland but at all universities. To meet the needs of the modern social order there has been an ever increasing demand for men and women who have pursued intensive graduate study in a restricted field and who are trained in the methods of research and creative scholarship. This highly specialized training can no longer be met by the requirements for the bachelor's degree.

Many of those who have received advanced degrees in the Graduate School are now discharging important duties in the State and Federal governments, in public health laboratories, and in large industries. Industry in many important fields has come to depend directly or indirectly upon the efforts of research workers trained in graduate schools. The Graduate School is training men for agricultural research in the State experiment stations and in other governmental and private research agencies. Agricultural problems are becoming more and more complex and are demanding for their solution men of high scholarship and men who have had intensive training in methods of research in their chosen fields.

A large proportion of the advanced courses now being offered for high school teachers and administrators, especially during the summer school, are on the graduate level. This is in a large measure a direct response to the requirements of the Maryland law regarding the training of high school principals and teachers.

Graduate work equivalent to either the master's or the doctor's degree is required of practically all college and university teachers. The Graduate School is training young men and women for careers as college and university teachers.

One of the important functions of the Graduate School is to promote and encourage scholarship and research throughout the University. This function has a vitalizing influence even down through the undergraduate teaching. The advanced undergraduates profit by the stimulating contacts with graduate students who are pursuing advanced study and research. These undergraduates have an opportunity to observe at first hand methods of research and to obtain a general idea of how the knowledge in their textbooks is originally acquired.

The direction of the work of graduate students is an important added stimulus to members of the faculty to keep them abreast of the recent advances in their fields and to continue their professional advancement. Much of the individual research by members of a busy teaching faculty could not be accomplished without the assistance of graduate students, especially fellows and graduate assistants. It is generally acknowledged in university circles that a strong graduate school is a great asset to a university in securing and retaining outstanding scholars on the faculty.

The Agricultural Experiment Stations are now recognized throughout the entire scientific world as important research institutions in the educational system of the country, and they are affording an excellent opportunity to many graduate students to learn research methods in their chosen fields and to do research work under the direction of the research scientists of these institutions. The graduate students holding research assistantships in the University of Maryland Agricultural Experiment Station work under direction,

on regular station projects, and through the splendid cooperation of the Experiment Station these students are permitted to use a unit of this research as a basis for a master's or a doctor's thesis. The Experiment Station, in turn, profits by having these efficient research assistants at a comparatively low cost. The apprenticeship of these assistants while they are working for higher degrees frequently becomes a period of trial in selecting men to fill regular positions on the Experiment Station staff.

The graduate students in the sciences basic to agriculture have an unusual opportunity at the University of Maryland because of its close proximity to the great research laboratories of the United States Department of Agriculture. The Beltsville laboratories are located only about two miles from the campus. Many of our students attend seminars and otherwise profit by contacts with the research scientists in these laboratories. The university, on the other hand, furnishes an opportunity for the younger men in these laboratories to continue their graduate education on a part-time basis.

The positions that are now being filled by University of Maryland doctors are in general indicative of the type of training the Graduate School is giving its candidates for this degree. Of the 41 persons who were granted the doctor's degree during the biennium, 19 are occupying teaching and research positions in universities and experiment stations; 15 are employed as research workers and scientific specialists in the various departments and bureaus of the United States Government; and 5 are employed in research laboratories of large industries.

During the biennium 85 master's and 41 doctor's theses were written by graduate students under the direction of various members of the faculty. Many of these theses have been based upon investigations of problems of direct interest and importance to the State. These problems have been concerned directly or indirectly with public health, the public school system, socio-economic conditions, Maryland industries, and the early history of Maryland. Most of the theses of the graduate students in the departments of the College of Agriculture have been in connection with the Experiment Station projects and they have thereby contributed to the solution of the agricultural problems of the State.

Tables 1 and 2 show for the last three bienniums the number of advanced degrees conferred and the departments in which the students pursued their major work. The departments that direct the major work of graduate students bear the greatest burden of graduate instruction, since these departments furnish not only major course work but also direct the research and thesis work of their major students. Several departments that have no graduate students, or only an occasional one, contribute much to our graduate

program by furnishing minor work to students who are majoring in other departments, but most of the minor work in these departments is taken in regular junior and senior courses. The departments with the largest number of major students are also, as a rule, the departments that have the largest number of minor students from other departments.

The total enrollment in the Graduate School for each year of the biennium is shown in Table 3.

TABLE 1—MASTER'S DEGREES CONFERRED, BY YEARS, DURING THE PAST THREE BIENNIUMS, SHOWING DEPARTMENTAL DISTRIBUTION OF MAJOR WORK

| Department | Master's Degrees | | | | | | |
|---------------------------------|------------------|------|------|------|------|------|-------|
| | 1931 | 1932 | 1933 | 1934 | 1935 | 1936 | Total |
| Agricultural Economics | 3 | 2 | 4 | 2 | 3 | 4 | 18 |
| Agricultural Engineering | 1 | .. | .. | .. | .. | .. | 1 |
| Agronomy and Soils | 2 | 3 | 2 | 2 | 1 | 2 | 12 |
| Bacteriology | 4 | 4 | .. | 4 | 2 | 2 | 16 |
| Botany | 3 | 2 | 2 | .. | 3 | 2 | 12 |
| Chemistry | 5 | 10 | 13 | 3 | 7 | 2 | 40 |
| Dairy and Animal Husbandry..... | 1 | 2 | .. | .. | 3 | .. | 6 |
| Economics | 1 | 1 | 1 | 1 | .. | 2 | 6 |
| Education | 4 | 8 | 11 | 10 | 11 | 10 | 54 |
| Engineering | .. | 1 | .. | .. | .. | .. | 1 |
| English | 1 | 1 | 8 | 7 | 7 | .. | 24 |
| Entomology | 2 | 4 | 3 | 1 | 1 | 2 | 13 |
| Genetics | .. | 1 | .. | .. | .. | .. | 1 |
| History | 4 | 1 | 5 | .. | 5 | 1 | 16 |
| Home Economics | 1 | 1 | 1 | 2 | 1 | 1 | 7 |
| Horticulture | 3 | 2 | 3 | .. | .. | .. | 8 |
| Mathematics | 1 | 1 | 1 | 1 | 1 | 1 | 6 |
| Medicine—Pharmacology | 1 | .. | .. | 1 | 1 | 1 | 4 |
| Modern Languages | 2 | 7 | 4 | 2 | 1 | 1 | 17 |
| Pharmacy | | | | | | | |
| Pharmaceutical Chemistry | 3 | 3 | 2 | 2 | 1 | 1 | 12 |
| Pharmacology | .. | 1 | 2 | 1 | 1 | .. | 5 |
| Pharmacognosy | 1 | .. | .. | .. | .. | .. | 1 |
| Pharmacy | 1 | .. | 1 | 2 | .. | .. | 4 |
| Physics | .. | 1 | 1 | .. | .. | 1 | 3 |
| Zoology | 1 | 1 | 1 | 3 | 2 | 1 | 9 |
| Total..... | 45 | 57 | 65 | 44 | 51 | 34 | 296 |

TABLE 2—PH.D DEGREES CONFERRED, BY YEARS, DURING THE
PAST THREE BIENNIUMS, SHOWING DEPARTMENTAL
DISTRIBUTION OF MAJOR WORK

| Department | Ph.D. Degrees | | | | | | Total |
|--|---------------|------|------|------|------|------|-------|
| | 1931 | 1932 | 1933 | 1934 | 1935 | 1936 | |
| Agronomy | .. | .. | .. | .. | 3 | .. | 3 |
| Bacteriology | 3 | .. | .. | .. | .. | 2 | 5 |
| Botany, including Plt., Phys. and Plt. Path. | 1 | 1 | .. | 6 | 2 | 1 | 11 |
| Chemistry | 3 | .. | 2 | 5 | 8 | 9 | 27 |
| English | .. | 1 | .. | .. | .. | .. | 1 |
| Entomology | 1 | .. | 1 | .. | 1 | 1 | 4 |
| Horticulture | 4 | 1 | 4 | 1 | 2 | 3 | 15 |
| Medicine | | | | | | | |
| Anatomy | .. | .. | .. | 2 | .. | 1 | 3 |
| Pharmacology | .. | .. | .. | .. | .. | 1 | 1 |
| Pharmacy | | | | | | | |
| Pharm. Chemistry | .. | .. | 2 | 1 | 2 | .. | 5 |
| Pharmacology | .. | .. | .. | .. | .. | 2 | 2 |
| Pharmacognosy | .. | .. | .. | .. | 2 | .. | 2 |
| Zoology | .. | .. | 1 | .. | 1 | .. | 2 |
| Total..... | 12 | 3 | 10 | 15 | 21 | 20 | 81 |

TABLE 3—GRADUATE SCHOOL ENROLLMENT FOR EACH YEAR
OF THE BIENNIUM

| Student Distribution | 1934-1935 | 1935-1936 |
|--------------------------------|-----------|-----------|
| Regular Academic Year | | |
| College Park | 155 | 146 |
| Baltimore Schools | 26 | 22 |
| Evening Courses Only..... | 20 | 37 |
| Total | 201 | 205 |
| Total, Summer School Only..... | 197 | 226 |
| Grand Total | 398 | 431 |

Since the total enrollment for the biennium was slightly smaller than that for the previous biennium, it is of interest to note the large increase in the enrollment for the present academic year. The total enrollment in the Graduate School for the first semester of 1936-1937 was 297. This number includes both full-time and part-time students. Of the part-time students 16 were registered only for evening courses in chemistry offered at Baltimore, and 16 in the evening courses in chemistry offered at College Park. These numbers do not include the total enrollment in these courses, as a few students were also registered in regular day courses. A few courses were offered in the evening for public school teachers in service and 27 students were registered only in one or more of these evening courses.

Under the joint auspices of the Baltimore Council of Social Agencies and the University of Maryland, graduate courses in social work are being offered this year for the first time. These courses are given in Baltimore and 31 students were registered during the first semester for graduate credit in one or more of these courses.

The total enrollment of regular graduate students in the Baltimore schools was 28; of this number 22 were in the School of Pharmacy and 6 were in the School of Medicine.

The total enrollment for the summer school for 1936 was 259; of this number 212 were in attendance during the summer session only. Including the enrollment in the summer school, there has been a net registration in the Graduate School of 509 since last Commencement.

College of Home Economics

DEAN MARIE M. MOUNT

THE curriculums of the College of Home Economics have been planned to give a student a general education in the arts and sciences in addition to training in home economics. This prepares a young woman for home making and for a profession by which, if necessary, she may earn her living. The strength of our communities and of our country depends upon the stability and character of our homes. It is the home maker who is responsible for making the kind of home that sends forth the responsible members of a community. There is no profession for women greater than home making and none that carries greater responsibilities and for which training is more necessary.

Students in the College of Home Economics in their junior year may elect one or a combination of the following curriculums: food and nutrition; textiles, clothing and art; institution management; home economics extension; or home economics teaching. The home economics education curriculum is reported under the College of Education. The home economics extension curriculum appears for the first time in the 1936-37 catalogue.

With the increasing enrollment of the past two years of 12 and 13 per cent, respectively, it has been necessary to make some changes and additions to courses. Interior decoration has been made a year course, giving in the first semester a study of the types and history of home architecture and furniture; followed in the second semester by a study of furnishings and arrangements for the interior. For such courses as food demonstrations, advanced clothing and practice in home management and nutrition it has been necessary to have more than one section to accommodate the students. To meet the

increasing demand of graduate students in home economics a few courses in foods, clothing and art, have been revised and planned for graduate credit. Within the next two years more graduate courses will be offered.

A course in home economics extension methods is being given for the first time this year, by the State home demonstration agent and specialists from the Maryland extension service and the Department of Agriculture. This will be followed next summer by a course in home economics extension field practice. For this a selected group of students will do practice work under the direction of the members of the extension service.

In order that home economics students may graduate with more experience than can be gained in the classroom, summer work is recommended. To obtain summer work for students the home economics staff members have contacted hospitals, cafeterias, camps, inns, summer hotels and such food manufacturing centers as sandwich shops and catering establishments. The experience of running a home during vacation time is urged for all home economics students.

Two lines of work have been done by graduate students during the past two years: a master's thesis covering the history of home economics in Maryland, and a study of the qualities of fats used in institutions for deep fat frying.

The nursery school conducted with Works Progress Administration funds continues with an enrollment of twenty. Home economics students receive experience and practice in child training with this group of children.

Each year the College of Home Economics holds a Mother's Day. At this time the mothers and friends of the home economics students are invited to spend the day at the University to see the work being done.

On November 14th, 1936, the members of the home economics staff and the senior students invited the home economics alumnae to participate in a homecoming. The alumnae gave informal talks concerning their work and experience since graduating. The faculty members and a few students presented to the alumnae the more recent development of home economics at the institution.

Mrs. Frieda McFarland, head of the Textiles, Clothing and Art Department, has published a book, "Good Taste in Dress."

There have been many calls in the past two years for staff members to speak before various organizations on topics related to the home.

During the past two years there has been an increasing number of calls for our graduates, which makes the future seem good for the capable graduates of home economics.

School of Medicine

J. M. H. ROWLAND, M. D., *Dean*

DURING the biennium, the usual work of the School of Medicine has been carried on. Several changes have been made in the curriculum. Those in the preclinical years were made to equalize the teaching of the first two years, and in the third and fourth years to make the necessary arrangements for clinical teaching at the University, Mercy and Baltimore City Hospitals.

Enrollment

A definite attempt has been made to reduce the number of students. Beginning with the class of 1934-1935, about twenty fewer students were admitted. This procedure has been followed in subsequent years, not more than 100 students being admitted to each freshman class. After the present session, 1936-1937, the classes will all average less than 100 students.

The resident students in recent years have been as follows:

| | |
|------------|-----|
| 1931 | 163 |
| 1932 | 182 |
| 1933..... | 221 |
| 1934..... | 220 |
| 1935..... | 255 |
| 1936..... | 239 |

This increase in the number of resident students has necessitated the taking of fewer non-resident students. The tuition for non-resident students is much greater and this has reduced our income very materially. It will be necessary, therefore, in future years to increase very materially our tuition fees, unless we receive greater income from endowment or State aid. Our tuition fees are already higher than any other state university medical school in America and will become a heavy burden to resident students. While we are reducing the number of students, it is not possible at the same time to reduce our teaching staff, because we have always been understaffed in the matter of full-time and part-time teachers.

The new University Hospital has already demonstrated its tremendous usefulness in increasing our facilities for teaching clinical medicine. With the control of the free clinics at Mercy Hospital and the University Hospital and the medical supervision of one-half of the cases at the Baltimore City Hospitals, our clinical material while not entirely adequate has been greatly increased. We are still badly needing facilities for psychiatric cases, the surgical specialties and gynecology.

At the Mercy Hospital the free clinics are under the supervision and control of our teaching staff. This furnishes clinical material for one-half of our senior class. The Outdoor Dispensary at the Mercy Hospital, in which many thousands of cases are treated each year, is an additional source of ambulatory clinical material.

The Baltimore City Hospitals consist of the following separate divisions:

| | |
|---------------------------------|-----------|
| General Hospital | 400 beds |
| Hospital for Chronic Cases ... | 508 beds |
| Hospital for Tuberculosis | 179 beds |
| Psychopathic Hospital | 275 beds |
| Infirmery (Home for Aged)..... | 1053 beds |

These are under the joint control of the Johns Hopkins Medical School and the University of Maryland School of Medicine and furnish a splendid addition to our clinical facilities. These cases and those of the University Hospital are used for the instruction of our third year students. The control of this material by the teaching faculties of the University of Maryland and Johns Hopkins University not only insures additional clinical material for the schools but also an unusually excellent type of medical service for the City's sick.

While our teaching facilities in the matter of psychiatry have been materially added to in the last two years, we still badly need a hospital for psychiatric cases directly adjacent to the University Hospital and Medical School.

Since the removal of patients from the old Hospital to the new one, we have been able to utilize the old Hospital for Dispensary and Outdoor Clinic. This whole building has been arranged for dispensary purposes, except two floors in the south wing. Thus, for the first time, we have satisfactory accommodations for our cases in the Outdoor Clinic. While we have not yet sufficient means to fully equip and conduct this Clinic, the improvement is already very great, not only in the physical environment, but also in the equipment and the efficiency with which the Clinic is conducted. When sufficient income is obtainable to properly equip and maintain this Clinic, it will rank among the first class of such institutions. More than 100,000 cases are taken care of each year in the various clinics. The service rendered is of great value to a large portion of the City and to many of the counties of the State and, at the same time, furnishes our students with a satisfactory supply of ambulatory material.

In connection with the other activities of the Clinic, there is an Out-Patient Obstetrical Department under the auspices of which several hundred women are delivered in their homes. This is in

addition to about 1,000 cases delivered in the University Hospital and the same number delivered at the Baltimore City Hospitals. For the first time, our students have an entirely satisfactory supply of obstetrical cases for instruction.

A new sub-department of Industrial Medicine and Surgery is under the combined supervision of the Medical and Surgical Departments and is a cooperative effort by members of the Medical School and Hospital Staff to afford means for study, both clinical and laboratory, of the patient who has been subjected to industrial hazard, either traumatic or medical, so that adequate care may be instituted to promote his physical well-being. The entire resources of the laboratories of the Medical School and Hospital are available as needed.

Under direction of this department, limited undergraduate instruction will be given, especially in the methods of examination and of keeping records; and in the general medico-legal principles as they affect the industrial employee, the employer, the general insurers, the physician and the hospital. There will also be instruction upon methods of making life insurance and other physical examinations, whether for employment or for health purposes.

During the month of June, 1936, the Medical School offered postgraduate courses in Pediatrics and Diseases of the Cardiovascular System. The course in Pediatrics was planned primarily for the physician in general practice, as well as the physician especially interested in children. The course in Cardiology was planned for the physician who wishes to familiarize himself with modern concepts of heart disease and related subjects.

There is a great need for an increase in the medical extension work of the University. With sufficient funds, the University could establish clinics and lectures in many of the counties of the State. While the members of our Faculty are constantly visiting the County Medical Societies for lectures and clinics, the amount of work done is entirely inadequate and not continuous. Some plan should be established by which the advances in the practice of medicine could be immediately and regularly conveyed to the general practitioners in rural Maryland. The lectures and clinics of the University are open at all times, free of charge, to any practitioner of the Counties of Maryland or City of Baltimore who desires to attend them. The Medical School stands ready at any time to institute extension courses which are requested by the State's practitioners.

While research is being carried on by nearly all the Departments of the School, the work is greatly hampered by the lack of funds and facilities. The income from the Isaac E. Emerson, John F. B. Weaver and Charles M. Hitchcock Funds is being used to carry on

this work, and we have received grants from the National Research Council and the Rockefeller Foundation. Additional income in this field could be used to great advantage.

New appointments and promotions in the Faculty have already been published in the Bulletin. We have suffered the loss by death of:

Dr. Frank Dyer Sanger, Professor Emeritus of Rhinology and Laryngology.

Dr. G. Milton Linthicum, Diseases of the Rectum and Colon.

The income from the endowment fund created by the late Dr. Frank S. Bressler will not be available until a new medical school building is provided. This is an imperative need, as the Departments of Anatomy, Physiology and Pharmacology are operating in a building entirely unsuited for modern laboratory instruction and research.

The University Hospital

A. J. LOMAS, M. D., *Superintendent*

I AM herewith presenting an outline of the work accomplished in the University Hospital during the year 1935-1936, ending September 30, 1936, it being, of course, the second year in the life of the new hospital. It has been one of very definite success throughout. We have treated a larger number of patients in most all of the departments, and have not only balanced our budget, but have wound up our affairs with a surplus.

In the attached statistics you will note that we have had total admissions amounting to 8,363, giving us a total for patient days amounting to 125,973. Our free admissions amounted to 47.03% of total admissions, a percentage of free patient days of 57.25%. With this increased number of admissions it follows that all departments have reflected this increase—operating rooms, anesthetics, accident department, and obstetrical service especially.

In our Out-Patient Department there has been a total of 84,382 visits. This shows a falling off of the number of patients treated during the year. This was anticipated, however, from the fact that during a large part of the year extensive structural alterations were being made, necessitating the closing of several of the departments for short but repeated periods of time. During the winter months especially, it was impossible to maintain regular service in some of

the clinics, particularly in the basement. Of this total only 29,000 paid anything towards their care, leaving the balance of 55,000 treated without any expense to them whatsoever.

There were 103 doctors on the staff of the dispensary manning a total of 23 clinics during the year.

The Junior League of Baltimore has assumed a definite responsibility and interest in the organization and equipment of a Curative Workshop. This has proved of decided benefit to the dispensary service, and has been quite successful in its first year of operation. Our thanks are due them for their continued interest in this work.

Returning to the hospital proper, we have endeavored to carry on improvements here and there throughout the building, which were impossible at the time of occupation. During the year we have been successful in painting the major portion of this building, which of course, was not done before we moved in. This has added greatly to the appearance of our wards and clinic spaces. We are at the moment converting three of the open porches on the south aspect into sun parlors, properly heated for the cold weather, which will be a decided addition to our ward service.

The Woman's Auxiliary Board have continued their constant zeal and interest in the welfare of the hospital. It is impossible to adequately express our appreciation for their untiring efforts.

Judging by the expressions of appreciation from patients and relatives, one must come to the conclusion that we have made a very large number of friends in our daily contacts.

We have been so definitely successful in our various achievements through the help which we have obtained from all concerned, that it is difficult to express a desire for more. There are one or two features, however, that are particularly bad, and need our consideration as soon as practicable.

I refer particularly to the housing of our nurses. Those now occupying the Nurses' Home are reasonably well cared for. Owing to their increased numbers, however, it has been necessary to make use of the west end of two floors in the dispensary building, as well as 622 West Lombard Street, for the housing of some of our personnel.

This accommodation is not only uncomfortable, but is really not up to an ordinary low standard of living conditions. Sanitary facilities are deplorably bad, and the general living space for what might be called recreational purposes for young women off duty, is totally absent.

Owing to the fire hazard in the dispensary building, I cannot feel secure in having these nurses occupy this space. It is quite true,

however, that the building was occupied by patients for many years, but nevertheless we still have this danger with us, and, of course, the same condition is present in 622 West Lombard Street. In this latter building the electrical wiring is old, inadequate, and in my opinion, dangerous, and this should receive attention practically at once.

I am not prepared to recommend that any considerable money be spent in reconditioning either of these premises for nurses, as when such reconditioning would be effected, there would still remain premises very inadequate for their purpose.

I cannot help but think that the only way to handle the situation would be by an addition to the Nurses' Home, and when this is done, it should be of such proportion as will take care of our future needs for a very considerable time to come. It is part and parcel of the general development of the new building, which has made additional space necessary throughout. The space vacated by the nurses in the dispensary building could be put to decided advantage for the dispensary service, and our development would be complete. Without this we cannot boast of a satisfactorily developed hospital in keeping with our reputation.

We are also suffering from the effects of the depression, in which not only did our wage scale receive very drastic treatment, but our actual personnel was reduced to the minimum. There are a number of positions (small however) that need filling to provide adequate service, and those workers who have been with us for several years, nurses and lay alike, need normal compensation in their various ratings for the work which they are rendering.

I do recommend that this receive serious consideration before the time of the preparation of the next biennial budget arises.

The addition of an assistant superintendent to the staff of the University Hospital has resulted in a very definite improvement in our service. Much of his time is devoted to the management of the dispensary and this has improved the service in this department very considerably, and has given us the benefit of constant supervision.

School of Nursing

ANNIE CRIGHTON, *R. N. Director*

SINCE 1889 when the Training School for Nurses was started the University has endeavored to live up to the ideal of nursing as set forth by Florence Nightingale, that of service. It has realized, as she did, the impossibility of doing this without proper educational facilities. In 1920 by the amalgamation of the Maryland State Agricultural College and the University of Maryland the training school became a definite unit of the University and became known as the School of Nursing. In 1924 with the inauguration of the Combined Academic and Nursing Program, leading to the degree of Bachelor of Science and a Diploma in Nursing, a definite improvement was made in the nursing curriculum. This combined course provides for two years at College Park followed by three years in the Nursing School of the University Hospital.

Nursing education today, just as other types of education, is undergoing definite changes in order to meet the new demands made upon it. Since the general level of education in the country as a whole has appreciably increased in the past few years it has resulted in a demand for a broader general education in addition to better technical training for those engaged in professional activities.

We might give as the objectives and underlying principles which direct the practice of modern nursing—first, the promotion of health; second, the prevention of disease; and third, the cure of disease and restoration to health. Until recently the main object in nursing was to care for the physical illness. Today this has enlarged to include these other phases. In the past the main factors in health promotion were the use of vaccine and sera, and sanitation, that branch of hygiene which is concerned with a pure water supply, with the supply and distribution of food and milk, and with the control of environmental factors which play a part in the cause or spread of disease. Today while this phase is still important the main emphasis is on the practice of personal hygiene and is to be brought about through a well laid out program of health education in which the qualified and properly prepared nurse must be the teacher. This program means not only overcoming and replacing the ignorance, prejudice and superstition of the past but it must also replace the poor health habits, mental, as well as physical, and help the individual to build up for himself habits which will enable him to live at his highest level, in body, mind and spirit. We realize that this can be done only by those who are closely associated with the individuals who have insight into and training in the handling of their problems. These people are met daily in the hospitals, in the clinics, in industrial plants, in schools, in their homes, and other

environmental situations, all of which afford excellent opportunities for proper instruction in building up better health habits, establishing better relationships, and aiding the individual to adjust to newer conditions. In order to meet this new demand of the public a course in Public Health Nursing was started in October 1936. This is a two months course given during the Senior year, in the Western Health District, where students also receive their field work. Unfortunately it is impossible at the present to have more than two students at one time in this course. This means that only a small number of the class will be able to benefit by this. The University is one of a few schools in the country to have such an important course in the basic training. With such a large field right at hand and so much need for this type of training it seems unfortunate that we cannot avail ourselves of the opportunity for the whole class.

With the rapid growth of medical knowledge and practice much of what was formerly the responsibility of the doctor has now become nursing practice. With the stress laid on research in order still further to add to this the doctor needs close and intelligent cooperation from his co-worker, the nurse. As the nurses are the ones with the patients twenty-four hours every day naturally it is from her that he expects much assistance. The beneficial effects of prescribed treatments will depend greatly upon the knowledge, skill and art with which they are carried out. Surely he should expect that the nurse should be studying this question in order to be able to use a technique which will secure the best results.

Since 1922 there has been a definite increase in the number of applicants thus enabling us to make a better selection of students so that now we admit only those of highest character and academic achievements; since 1924 there has been a definite improvement in the plan of instruction. At the present we admit a large percent of students who have had courses beyond high school, some with college degrees, others with from one to three years of college or post-graduate courses in high school. All of this gives us students who should be more mature and thus better able to meet the responsibilities which they will be called upon to assume.

It seems that with our attempt to meet these new demands and realizing that the function of a school is to prepare its students to take on the responsibilities which confront them that the Nursing School should have the education of the nurse as its primary function. Unfortunately, due to the fact that the nursing school is practically entirely responsible for the nursing care of the patients of the hospital it is impossible to plan their education in such a way that they will always be prepared for the responsibilities which they are obliged to assume. To obviate this as much as possible we have worked out a better plan for the preliminary student than we have previously had. This provides for a little more and better super-

vision of these young students during their first contacts on the wards, in the management of the patients, and in planning for their nursing care.

Realizing also the need for more ward teaching in the actual problems of nursing and in keeping with the modern trend in nursing education we have had for the past year ward classes which deal with the diseases and their treatment, present on the wards at the time. These are given by the resident physicians of the various services and are followed in another class given by the nurse supervisor who takes up the problems of nursing care. In marked contrast to the new hospital, the classrooms and laboratories of the Medical School, School of Pharmacy and Dental School, the teaching department of the Nursing School is deplorably inadequate in space, type of rooms and equipment, has no offices, very meager library facilities, all of which presents a serious problem in planning and carrying out an educational program in nursing.

We are much gratified, however, at the spirit with which our nurses are meeting the difficulties and inconveniences due to lack of proper housing facilities. The two buildings, part of the old hospital and the old Mental Hygiene building, which serve as additional space for the Nurses Home are very inadequate and poorly planned for such a purpose. The lack of space is also another factor in trying to work out any form of recreational or extra-curricular activity.

In spite of these difficulties our nurses are meeting their bigger responsibilities and obligations by taking their part in state and local activities. Since 1930 a University graduate has been appointed to the Maryland State Board of Examiners of Nurses, they have held offices in the State Association, and take an active part in the State League of Nursing Education. They are well represented in the various fields of nursing in Maryland, in Public Health, Instructive Visiting Nurses Association, Industrial Nursing, in private duty nursing, and in various positions in the hospitals of the cities and counties.

The School of Law

ROGER HOWELL, LL.B., PH.D., *Dean*

DURING the past biennium, the School of Law has necessarily devoted its attention primarily to its principal task of furnishing to the citizens of Maryland a school where a legal education could be obtained comparable to that offered in the better schools elsewhere in the country. That higher standards of legal education in the State are imperatively demanded in the interest of the public welfare has been emphasized in prior reports; nationally, it is regarded as one of the most pressing public needs, as has recently

been re-emphasized by the American Bar Association; this is particularly true in Maryland, where a condition of overcrowding in the legal profession exists to a greater degree than in all except five other jurisdictions.

Since the last report, a course in Taxation, the need for which has been cited in prior reports, has been added to the curriculum. Also, in co-operation with the Baltimore Legal Aid Bureau, a legal aid "clinic" has been instituted, by which selected senior students may substitute supervised legal aid work for work in Practice Court during one semester; besides giving such students practical instruction of great value to themselves, this also affords them an opportunity to perform work of definite social value.

It is incumbent upon a teacher of law, not only to teach, but, through his writings and participation in professional activities, to contribute to the advancement of legal science—particularly, in a State University law school, to engage in research activities of benefit to the bench and bar of the State. The following may be mentioned as outstanding activities of the Law School faculty during the past biennium:—

Beginning in 1936, the Law School, with the support and co-operation of the Maryland State Bar Association, the Bar Association of Baltimore City, and the Junior Bar Association, has undertaken the publication of a quarterly law review, devoted primarily to questions of Maryland law and other matters of especial interest to the Maryland bench and bar. This constitutes the realization of a long felt desire for a legal journal of this character on the part of the legal profession in the State. The Review is under the direction of Professors Strahorn and Ritchie, assisted by a student editorial board and an advisory board composed of the faculty of the school and representatives from the co-operating bar associations.

Faculty members have also been active in Bar Association and Law School Association work. Mr. Niles was a vice-president of the State Bar Association in 1935, Chairman of the Grievance Committee of the Baltimore City Bar Association in 1936 and is Chairman of the Committee on Criminal Law Enforcement for 1937; he has also continued his editorship of American Maritime Cases and United States Aviation Reports. Mr. Clark was President of the Bar Association of Baltimore City in 1935, and is a member of the Committee on Pre-legal Education for 1937. Dean Howell was a member of the Committee on Laws of the State Bar Association in 1935, and a vice-president of that Association in 1936, and was Chairman of the Committee on Non-Member Schools of the Association of American Law Schools in 1936. Professor Ritchie was a member of the Committee on Curriculum, and Professor Reno of the Committee on Non-Member Schools, of the Law School Association in 1936.

On the whole, it is felt that the progress of the School during the past biennium has been satisfactory. In its faculty and its student body, it compares favorably with the better schools elsewhere. So far as concerns physical equipment, its greatest need is an appropriation to enable the installation of additional stacks in the library; when the building was constructed in 1931, room was provided for five tiers of stacks, but only two were installed. The normal growth of the library since 1931 has reached a point where additional stacks have become an imperative necessity. By far the greatest need of the School, however, is an increase in its appropriation for maintenance, sufficient to enable it to raise the salary scale for its full-time faculty, which at present is well below the average for Class A schools. During the past year, the School lost one of its full-time faculty to another school and three members of its present full-time faculty have been approached by other schools. Keeping its faculty organization substantially intact is regarded as essential to the proper functioning of the school; this cannot be done indefinitely against offers of higher salaries from other institutions.

Maryland Annotations to American Law Institute Restatements.—In the last report, mention was made of participation of Law School faculty members in this work, and its great importance to the legal profession of the State. Since that time, the Agency annotations by Professor Casper have been published by the Law Institute, and the Conflict of Laws annotations have been completed by Professor Reiblich for publication during the coming year. At the present time, Professor Reiblich has in charge the Trusts annotations, in which he is being assisted by two recent graduates of the School, Miss Elizabeth M. C. Chesnut and Mr. Joseph O. Kaiser. Professor Reno has begun work on the annotations to the Restatement of Property.

The following publications by members of the Law School faculty have appeared during the past biennium:—

Alfred Bagby, Jr.:—

Supplement to Maryland Law of Executors and Administrators, pp. 71.

Huntington Cairns:—

Law and the Social Sciences, pp. xiv, 279.

Tax Laws of Maryland, Annotated, pp. xvii, 337.

The Explanatory Process in the Field of Inheritance, in 20 Iowa Law Review, 266.

Law as a Social Science, in 2 Philosophy of Science, 484.

A Note on Legal Definitions, in 36 Columbia Law Review, 1099.

Review of Robinson, Law and the Lawyers, in 1 Maryland Law Review, 101.

A. James Casner:—

Maryland Annotations to the American Law Institute's Restatement of the Law of Agency, pp. vi, 315.

Review of Leach, Cases and Materials on Future Interests in 30 Illinois Law Review, 1084.

W. Calvin Chesnut:—

An Analysis of the Proposed New Federal Rules of Civil Procedure, in 22 American Bar Association Journal, 533.

History of the Federal Courts in Maryland, in 41 Transactions Maryland State Bar Association, 63.

Walter L. Clark:—

Remarks on Legal Education, in 40 Transactions Maryland State Bar Association, 52.

The City Service Commission, chapter in Stieff, The Government of a Great American City.

School of Dentistry

DR. J. BEN ROBINSON, *Dean*

CONTRARY to the experience of a majority of the schools of the University, the School of Dentistry has shown during the present biennium a sharp decline in enrollment. Two factors have been prominent in producing this condition. First, a number of states increased their requirements for admission to practice in advance of the minimum preprofessional requirements fixed by the American Association of Dental Schools, thus diverting prospective students from those schools enforcing the minimum standards. Second, anticipating the change by the Association which requires all dental schools to advance to the higher preprofessional requirement in 1937, the Dental School made this requirement effective beginning with the 1936-37 session. As a consequence the enrollment has reached a new low, with the prospect of further reduction until such time as a balance in quantitative standards is established between the states and the many dental schools.

Because of the narrow margin of income received by the Dental School from State Funds the amount of instruction provided in the dental schedule is very sensitive to the fluctuations of income from student fees. In view of the reduced enrollment it has been necessary to reduce sharply the scheduled hours of teaching in the Dental School. Unfortunately these retrenchments have resulted in the loss of a number of competent and experienced teachers. Further reductions in this respect are indicated in the anticipated small enrollment which must follow for the next few years. It is hoped that retrenchments will not have to be carried to a point where they will reflect on the quality of instruction for which the Dental School is known.

The Dental School has clearly outgrown its present physical facilities and is badly in need of additional space. This situation has been created by the necessity for expansion of a number of courses whose value to health service has become better understood and for which

dental schools will be held responsible. Greater emphasis on these subjects is required for adequate training of young men preparing to enter the dental profession. In addition the recent study of the dental curriculum has revealed the need for reorganization and expansion and for the addition of new courses to the dental schedule; it has placed an emphasis upon research that requires university administrators to view dental education in a new light. Expansion of physical facilities is necessary to meet the increased growth in these departments. These deficiencies in physical facilities have been called to the attention of the Board of Regents and we are glad to report that an effort is being made to provide for these growing needs.

The need for a closer cooperation between medical and dental teaching is recognized by both medicine and dentistry. From time to time the statement has been made that dental teaching is deficient in respect to hospital training and the experience which dental students should have with the sick. Efforts have been made to correct this deficiency and at the same time to improve the services which medicine renders, by supplementing the latter with a competent oral health service. To this end the Schools of Dentistry and Medicine arranged a dental service in the University Hospital which not only improves instruction to dental and medical students, but provides a much needed dental service available to the medical and surgery services in the Hospital. The new University Hospital has equipped a splendid dental unit which is becoming more and more useful. These plans have been operating for the past four years with beneficial results to both medical and dental schools.

School of Pharmacy

A. G. DuMEZ, PH.D., *Dean*

THE biennium which ended September 30, 1936, was more or less a period of reorganization for the School of Pharmacy. A fourth year of work was added to the curriculum in 1932 to comply with the requirements of the American Association of Colleges of Pharmacy. This necessitated the complete reorganization of the curriculum including the addition of new courses and the revision of others. The major part of the work fell in the period covered by the biennium. In addition to the work necessitated by these changes, special efforts were made to improve the courses given for graduate students and to stimulate research, as it is believed that the greatest opportunities for service in the future will be found in these fields.

The enrollment continued to decrease during the biennium. This is to be attributed in part, at least, to the fact that employment was still far below normal and to the raising of standards in the School of Pharmacy at the beginning of the preceding biennium, but is due primarily to the new requirements for entrance to the Medical School which were put into effect in the Summer of 1936 and to the discontinuance of the Combined Course in Medicine and Pharmacy. The effects of these changes on the enrollment are shown in the table which follows:

| CLASS | 1933 | 1934 | 1935 | 1936 |
|-------------------|-----------|-----------|-----------|-----------|
| First Year | 101..... | 95..... | 90..... | 59 |
| Second Year | 86..... | 76..... | 65..... | 39 |
| Third Year | 103..... | 72..... | 72..... | 56 |
| Fourth Year | 12..... | 14..... | 42..... | 62 |
| Graduate | 18..... | 18..... | 14..... | 22 |
| Special | 6..... | 5..... | 6..... | 8 |
| | <hr/> 326 | <hr/> 280 | <hr/> 289 | <hr/> 246 |

Owing to the increased demand for highly trained workers in the drug industry as a result of improved business conditions, changes in the personnel of the faculty were unusually numerous during the last year of the biennium. There were only two changes in 1935; but in 1936, there were 14 resignations and two transfers, one from the Department of Bacteriology and one from the Department of Pharmaceutical Chemistry to the Department of Pharmacology. The vacancies caused by the resignations and transfers were filled by 16 new appointees, two part-time assistants having been appointed to fill the vacancy created by the resignation of a full-time instructor in two instances and two new part-time assistants having been appointed to assist in giving the work of the fourth year which was added to the course in 1932.

The work in physiological chemistry was transferred from the Department of Pharmaceutical Chemistry to the Department of Pharmacology because of the possibilities for better correlation of the work with that of the courses in physiology and pharmacology, and because duplication of apparatus and personnel could be avoided by this arrangement.

Since 1932, when the curriculum was lengthened to four years, the faculty has devoted much time and effort to organizing the courses offered and to improving the instruction given. The fact that the effort has been worthwhile is already evident. Only 4 of the 39 members of the first class to graduate from the new four-year course who took the examination given by the Maryland Board of Pharmacy in June 1936 for registration as pharmacists failed to obtain a passing grade. Equally as gratifying as the showing made by the undergraduates before the Board of Pharmacy are the

achievements of the faculty and graduate students in the field of research. During the biennium, there were published in various scientific journals no less than 24 papers reporting the results of studies and researches carried out by members of the faculty and graduate students. The fact that these papers were accepted for publication in journals having a nation-wide circulation is evidence of general recognition of the worthwhile character of the work reported. As further evidence of the high esteem in which this work is held, it is stated that three members of the faculty received national honors for the work done in their respective fields during this period, viz.: Dr. Marvin R. Thompson, Emerson Professor of Pharmacology, was named as one of the twenty-five scientists comprising the 1935 Honor Roll of "Modern Medicine"; Assistant Professor of Pharmacy, M. J. Andrews, was awarded the Ebert Prize by the American Pharmaceutical Association for the best paper on research published in 1935 and Dr. Glenn L. Jenkins, Professor of Pharmaceutical Chemistry, was awarded the prize for the best paper published in 1936. These achievements take on added significance when the fact is made known that they represent work done in addition to the regular teaching load—there are no members of our faculty employed to devote their time to research.

It is the aim of the faculty and assisting staff to serve the people of the State in every way possible, and particularly the pharmacists, to render such aid as time and facilities permit to the other departments of the University, public institutions, the pharmacists of the State and its citizens in general. Aid has been given to all of these agencies during the period covered by this report, viz.:

With the completion of the New University Hospital, two additional members of the teaching staff were assigned to duty in the drug room of that department; and the number and quantities of preparations made in the laboratories of the School for use in the Hospital were greatly increased.

Senior students were assigned to duty in the various hospitals of the city to assist the pharmacists in charge. Among the hospitals served in this way were the University Hospital and the Dispensary, the Johns Hopkins Hospital, Union Memorial Hospital, Sinai Hospital and the Baltimore City Hospitals.

Most of the members of the faculty have given some aid, either directly or indirectly, to the various pharmaceutical organizations of the State. One member of the faculty has been in charge of the publicity work of the Maryland Pharmaceutical Association and the Baltimore Retail Druggists Association, the purpose of which is to induce physicians to make greater use of the two official drug standards, the Pharmacopoeia and the National Formulary, in prescribing. Other faculty members have served on committees of these

organizations, have presented papers at their meetings or have served in other ways to improve the service given by the pharmacists to the citizens of the State.

Close cooperation with the Maryland State Board of Pharmacy was continued. On three occasions during each year of the biennium, the Board used the laboratories and classrooms of the School for the examinations given to candidates for licensure. There was also cooperation in the fixing and maintainence of qualifying standards. In this particular, the School was also active in a national way. The Dean of the School is Secretary of the American Council on Pharmaceutical Education, and the major part of the work done in the past two years in the drafting of standards for the accreditation of colleges of pharmacy was carried by him.

Other members of the faculty were also active in a national way. At least four heads of departments were active in the revision of our national drug standards, the Pharmacopoeia and the National Formulary; the members of the staff of the Department of Pharmacology continued their service to pharmaceutical manufacturers who are not equipped to standardize their products biologically; and still others served as officers or members of committees of national organizations during the two year period.

The Library

GRACE BARNES, *Librarian*

THE main objectives of the Library are to procure books and other literature for faculty and students; to make them available through classifying, cataloguing and help in locating information; to preserve them; to provide suitable places for reading and study, and the set-up for lending.

In the fall of 1935 an addition of \$5,214 to the book budget balanced the cuts of the two depression years and made possible the purchase of about 1400 more volumes among which were such outstanding acquisitions as: a set of the Studies in History and Political Science of Johns Hopkins University; Corpus Juris, an encyclopedia of law in 71 volumes; 28 volumes of American Journal of International Law; U. S. Statutes at Large, 42 volumes; U. S. Supreme Court Reports, 48 volumes; Papers relating to the Foreign Relations of the United States from 1861 through 1895.

By purchase, gift and binding of serials, 4105 volumes were added during 1934-35 and 4455 volumes during 1935-36, making a total of

8560 volumes for the biennium. This is an increase of 2349 over the previous biennium and brings the total of books on the campus up to about 60,000.

Five hundred and fourteen periodicals and newspapers are received, 447 by subscription.

Outstanding gifts were: \$100 from the class of 1935, spent for the purchase of books; a collection of texts, 213 volumes from Miss Kathleen Smith and 76 from Professor Henry Brechbill, both of the College of Education; 52 books from Mr. Temple Thomason; 466 miscellaneous books from the estate of Mrs. Rosalie Small of Silver Spring, Maryland; about 700 volumes, mostly in the field of animal husbandry, from the daughters of Samuel Sutherland Buckley, as a memorial to their late father.

STATISTICS OF CATALOGING AND RECATALOGING

| Year | Volumes | Cards for Cat. | Cards for Shelf List |
|-----------------------|---------|----------------|----------------------|
| 1934/35 | 4237 | 9164 | 1451 |
| 1935/36 | 4611 | 12698 | 2211 |
| Recataloged | | | |
| 1934/35 | 1131 | 1856 | 301 |
| 1935/36 | 726 | 1645 | 431 |
| <hr/> | | | |
| Total for biennium... | 10705 | 25363 | 4394 |

Increase in volume of work over last biennium, 490 books and 4651 cards.

Loans of all books and periodicals, including reserved books, amounted in 1934-35 to 59,416 and in 1935-36 to 65,557. The total for the biennium, 124,973, shows an increase of about 2½% over the previous biennium.

Volumes borrowed from other libraries were 81 in 1934-35 and 47 in 1935-36, making a total of 128. Volumes loaned to other libraries were 17 and 14 respectively, for the two years, a total of 31. These figures show that we borrowed 40 less and loaned 25 more than during the previous biennium, the deduction being that the library is becoming more self-sufficient and more able to reciprocate its loans.

A one-semester course for Freshmen on the use of reference books and the card catalogue is taught by the Librarian and the Reference and Loan Librarian. The Librarian taught a course in Family Libraries and Literature during the Winter School, January 7 to February 15, 1935, and a course in Library Resources in Education during the Summer School of 1936.

Work done by students on this fund includes service at the loan desk, clerical work in preparing books for circulation, reading shelves, arranging documents, work with clippings, and indexing of the Diamondback, the University weekly paper.

GROWTH OF THE LIBRARY

| | 1936-37 | 1931-32 | 1926-27 | 1921-22 |
|----------------------------------|-----------|----------|----------|---------|
| Budget, including salaries..... | *\$22,972 | \$20,300 | \$13,420 | \$4,720 |
| Staff, excluding students | 6 | 6 | 4 | 2 |
| Loans, including "Reserves" ... | ** 65,557 | 42,090 | 25,530 | |
| Volumes on campus | 60,000 | 40,500 | 19,306 | 10,000 |
| Volumes catalogued | ** 5,023 | 4,439 | 1,891 | |
| Library visitors per day..... | *** 1,461 | 1,130 | 466 | |
| Students in library science..... | ** 308 | 264 | 136 | 65 |

* Includes special allotment of \$5,000.

** Figures cover 1935-36.

*** Survey taken in 1934-35.

The above table gives statistics at five year intervals for the past fifteen years. It will be seen that since 1931, when the library building was first occupied, we have at least 331 more visitors in the reading room a day, are making annually 23,467 more loans; have acquired 19,500 more books. The increase in catalogued books necessitated an added cabinet for catalog cards during the past year. These additional books now call for more book stacks to house them. The recent special funds for books have given an impetus to the building up of the library which needs to go on steadily to be of the greatest advantage to students and faculty.

The Military Department

COL. JOS. D. PATCH, *Professor of Military Science and Tactics*

THE Reserve Officers' Training Corps is authorized by the National Defense Act. The general objective is to qualify students for positions of leadership in the event of a national emergency.

The course of four years duration is divided into a basic course of the first two years, corresponding to the freshman and sophomore years; and an advanced course of the last two years, corresponding to the junior and senior years.

The primary object of the advanced course is the production of reserve officers.

The object of the basic course is not only to impart military training which will be of value to the Nation in an emergency, but in addition to give practical instruction in physical training, personal hygiene, first aid, courtesy and leadership, which will help the graduated student in an industrial or professional career.

When the last Biennial Report was rendered the number of students receiving military training was less than seven hundred. Of these sixty-four were in the advanced course. At present, approximately nine hundred receive training, and of this number, approximately one hundred are in the advanced course. The large number of basic students is due, of course, to the academic regulations which require physically fit students to "take the basic course as a pre-requisite to graduation." It is my sincere belief that this policy is sound. I believe that it not only contributes to the national defense, but in addition contributes to the boys' educational equipment in any career in civil life.

The nine hundred students are organized into a regiment of four battalions. Three of the battalions contain three companies and the fourth battalion two companies. This setup enables all the officers who are seniors to occupy an officer's post, either in command or in a staff position. The juniors function as sergeants, the sophomores as corporals, and the freshmen as privates. Thus all but the freshmen receive training in leadership. Every effort is made to place responsibility upon student leaders in order to develop initiative and self-confidence.

The instructional staff consists of four officers, one warrant officer, and one non-commissioned officer detailed by the War Department. The staff has been of this size for several years. The increased enrollment has created a heavy load for a staff of this size, and another officer instructor is very much needed.

The classrooms for sections provided by the University are adequate and well located. At present there is no assembly space where the entire unit can be assembled during inclement weather as the Armory-Gymnasium is shared with Physical Education classes. Either the present building or a new Armory would be of great value to the R. O. T. C. Due to its location, it would also be of value in the event of a mobilization.

The facilities for the caring for Government property are excellent. The military store room at the University will compare with the best I have seen.

The allotment of a stenographer and a military property custodian to the Department by the University makes possible the accomplishment of the large amount of administrative work necessary for a

unit of this size. Both are highly proficient, and it is my opinion that the standard of administrative work performed here will not suffer in comparison with any other institution.

The record of the R. O. T. C. at the University of Maryland speaks for itself.

Since the last Biennial Report, the unit has continued to earn the highest rating the War Department can award, that of "Excellent."

During the last summer camp in competition with nineteen other institutions, a Maryland student was elected as the outstanding military student in the camp; a Maryland student won the rifle and pistol championship, and the Maryland unit out-fired every other unit in camp. Furthermore, the Maryland students won the majority of athletic awards.

During the last year there were thirty-five available appointments in the Third Corps Area for provisional officers of Infantry in the Regular Army. Out of the thirty-five available to all R. O. T. C. Units in the Third Corps Area, Maryland students captured fifteen appointments, or nearly fifty per cent.

The above will, I believe, illustrate some of the achievements of this Department.

In conclusion, I wish to say that the record of the Department was only made possible by a helpful cooperation on the part of the President and Faculty, which is the finest I have seen anywhere.

Office of Admissions

W. M. HILLEGEIST, *Director*

THE office of the Director of Admissions was created in June, 1936, when the duties of the Registrar (Baltimore) and the Assistant Registrar (College Park) that pertained to the admission (pre-registration) of students were separated from the registration procedure and keeping of the students' records. The Registrar was appointed the Director of Admissions, and the Assistant Registrar was named the Registrar. These officials are responsible for their respective duties in Baltimore and at College Park. This coordination of executive services, wherever possible, is in keeping with the general policy of the administration. Due to the fact that the statistical records in the two divisional offices were not similar, this

first report cannot exhibit as much detail as is desirable. There follows the number of applications for admission received for the biennium—1935-1936, 1936-1937:

| | 1935-36 | 1936-37 |
|------------------------|---------|---------|
| College Park (*) | 1067 | 1297 |
| Baltimore | 1210 | 1081 |
| Dentistry | 124 | { 78 |
| Law | 133 | \| 82 |
| Medicine | 724 | \| 750 |
| Nursing | 125 | \| 95 |
| Pharmacy | 104 | { 76 |
| Total | 2277 | 2378 |

(*) The College Park figures include only the undergraduate colleges—Agriculture, Arts and Sciences, Education, Engineering, Home Economics—for the regular sessions.

The number of undergraduate applications received during the summer sessions is not available. The number of candidates for admission to the Graduate School is "estimated" to be about 420, not including the summer session of 1937.

Of the number of College Park applications, 914 were approved for 1935-1936, and 1050 for 1936-1937; and of those which were approved, 122 did not register in 1935-1936, and 207 in 1936-1937. The very large number of applications for the limited offering of scholarships accounts, perhaps, for so many non-registered certified applicants.

There are two known causes why the figures for dentistry have decreased. The School of Dentistry raised the requirement for admission in 1936-1937 from one year to two years of preprofessional study—this is the new standard of the Dental Educational Council of America which will be in effect in 1937-1938. There has been a nation-wide decline in the number of dental applications.

There does not seem to be any understandable reason why the number of law and nursing applications should have decreased so perceptibly for the current year; or why the 1935-1936 figures should be so much higher than in 1934-1935—98 for law and 86 for nursing. Applications for admission to medicine have not been accepted as a rule after about the early part of July preceding the regular school year. Less than one hundred persons are being admitted now into the freshman class. Preference is given always to residents of Maryland who are qualified in every respect.

Beginning with 1937-1938, the minimum requirement for admission to the School of Medicine will be three years of premedical training. The minimum requirement of the American Medical Association and the Association of American Medical Colleges continues to be two years of college work. The decrease in the number

of pharmacy applications for 1936-1937 is due primarily to the change in the requirement for admission to the School of Medicine. The pharmacy four-year curriculum includes two years of work conducted or approved by the College of Arts and Sciences. These courses having premedical value encouraged a number of residents of Maryland to register in the School of Pharmacy to prepare for the study of medicine. The curriculum is not adequate now to give the three years of college credit required by the School of Medicine.

A twenty-four months' Laboratory Technicians' (now Medical Technologist) course was begun in 1935-1936. It was operated in conjunction with the University Hospital laboratory.

Three persons applied for admission in 1935-1936, and one in 1936-1937. Two years for college work were required for registration. The course has been discontinued.

The Department of Art as Applied to Medicine (School of Medicine) is maintained for the purpose of supplying pictorial and plastic illustrations for visual teaching in the classrooms of the University, and for publication in scientific periodicals. Special courses of instruction are given to qualified students. High school graduation is specified for admission. Four persons applied this year.

The University of Maryland is approved by the Association of American Universities, and the Middle States Association of Colleges and Secondary Schools.

The Director of Admissions (and previously as the Registrar) has been cooperating since 1921 with the Maryland Board of Examiners of Public Accountants by appraising the non-professional educational records of the candidates for admission to the Certified Public examinations. Qualified applicants receive a certificate of entrance which is signed by the Director of Admissions and impressed with the University of Maryland seal. The number of applicants was 73 in 1935-1936, and 62 in 1936-1937.

Office of the Registrar

ALMA H. PREINKERT, *Registrar*

IMPROVED economic conditions are reflected in the registration figures for the past biennium, during which period the University reached its highest enrollment in history. Another factor contributing in some measure to the increase, has been the federal aid extended through the National Youth Administration, which provided financial assistance for needy students who could not have remained in college without this help. But perhaps the most important factor, is the faith that is placed in the value of higher education by the

people, and their confidence in the economic and cultural returns it will bring to the individual and to society. The depression years convinced many that those with better training were equipped to withstand periods of economic stress far more successfully than those without such training, and that greater opportunities in the future will come to those who are qualified by higher education to accept them.

One of the most significant figures in the enrollment statistics is the size of the freshman class at College Park the second year of the biennium, when it numbered 703, as compared with the preceding year when there were 594 freshmen. This is an increase of 109 students or eighteen per cent., and is far greater than that of other institutions comparable to the University of Maryland. This unusual increase can be explained only by local factors, and is attributable to the great improvement in the academic standing of the University made possible by the appointment to the faculty, beginning with the fall of 1935, of a number of distinguished teachers and scholars. This enlarged faculty has made it possible to enrich many curriculums with wider course offerings. In this connection it should be noted that the 1935-1936 instructional staff at College Park shows an increase of seven professors, one associate professor, one assistant professor and five instructors over the preceding year.

Since the consolidation of the two branches of the University in 1920 a total of 9704 degrees and certificates have been awarded. Of these 47 were honorary degrees and of the remainder 5,281 were conferred by the Baltimore Schools and 4376 by the College Park colleges. Included among the degree recipients are 1341 physicians, 1213 dentists, 1169 pharmacists, 1054 lawyers, 616 engineers, 571 teachers, and 359 nurses. The College of Agriculture conferred 445 degrees and awarded 87 certificates and the College of Home Economics numbers 158 graduates. There are 1108 graduates of the College of Arts and Sciences, and advanced degrees were earned by 654 persons in the Graduate School. In addition to the degrees conferred by the College of Education, 737 were awarded teachers' diplomas. The School of Business Administration, formerly located in Baltimore awarded 145 degrees and certificates. During the biennium 1472 degrees and certificates have been awarded including 3 honorary degrees, 614 awarded by the Baltimore schools, and 855 by the College Park colleges.

The table giving the geographical enrollments during the regular school year is interesting. While the majority of the students are residents of the State of Maryland, a total of thirty-eight states is represented in the enrollment, and in addition, the Canal Zone, Puerto Rico, and six foreign countries.

Tables giving information concerning the enrollment of students, the instructional staff, the departmental instructional load at College

Park, the degrees conferred and certificates awarded, and the geographical distribution of students are submitted herewith. A table is included showing the enrollment of resident students carrying regular courses for the period since the institution became the University of Maryland.

Enrollment of Students

COLLEGE PARK

Resident Courses: Academic Year

| | 1934-1935 | | | 1935-1936 | | |
|----------------------------------|-----------|-------|-------|-----------|-------|-------|
| | Men | Women | T'tl. | Men | Women | T'tl. |
| College of Agriculture..... | 182 | 12 | 194 | 179 | 28 | 207 |
| College of Arts and Sciences.... | 696 | 169 | 865 | 685 | 209 | 894 |
| College of Education..... | 105 | 209 | 314 | 95 | 217 | 312 |
| College of Engineering..... | 305 | ... | 305 | 315 | ... | 315 |
| College of Home Economics.... | ... | 126 | 126 | ... | 140 | 140 |
| Graduate School | 160 | 38 | 198 | 157 | 41 | 198 |

Total Academic Year,

| | | | | | | |
|---------------------|------|-----|------|------|-----|------|
| College Park | 1448 | 554 | 2002 | 1431 | 635 | 2066 |
| Summer School | 408 | 608 | 1016 | 399 | 580 | 979 |

Total Resident, Collegiate Col- lege Park, less duplications.

| | | | | | |
|------|------|------|------|------|------|
| 1674 | 1078 | 2752 | 1631 | 1113 | 2744 |
|------|------|------|------|------|------|

Extension Courses:

| | | | | | | |
|-----------------------------|-----|-----|-----|-----|-----|-----|
| College of Education..... | 130 | 120 | 250 | 145 | 84 | 229 |
| College of Engineering..... | 403 | ... | 403 | 274 | ... | 274 |

Total, Resident and Extension,

| | | | | | | |
|-------------------------|------|------|------|------|------|------|
| Less Duplications | 2194 | 1192 | 3386 | 2038 | 1193 | 3231 |
|-------------------------|------|------|------|------|------|------|

Short Courses:

| | | | | | | |
|----------------------------|-----|-----|-----|-----|-----|-----|
| Rural Women | ... | 677 | 677 | ... | 736 | 736 |
| Boys' and Girls' Club..... | 103 | 226 | 329 | 198 | 126 | 324 |
| Volunteer Firemen | 230 | ... | 230 | 95 | ... | 95 |
| Canners | 89 | ... | 89 | 45 | ... | 45 |
| Florists | 126 | 25 | 151 | 29 | 4 | 33 |
| Garden School | 5 | 70 | 75 | 30 | 283 | 313 |
| Nurserymen | 47 | 3 | 50 | 47 | 6 | 53 |
| Winter School | 15 | 6 | 21 | 8 | 3 | 11 |

| | | | | | | |
|---------------------------|-----|------|------|-----|------|------|
| Total Short Courses | 615 | 1007 | 1622 | 452 | 1158 | 1610 |
|---------------------------|-----|------|------|-----|------|------|

Total All Courses, College

| | | | | | | |
|-----------------------------|------|------|------|------|------|------|
| Park, Less Duplications.... | 2809 | 2199 | 5008 | 2490 | 2351 | 4841 |
|-----------------------------|------|------|------|------|------|------|

BALTIMORE

Resident Courses: Academic Year

| | 1934-1935 | | | 1935-1936 | | |
|---------------------------|-----------|-------|-------|-----------|-------|-------|
| | Men | Women | T'tl. | Men | Women | T'tl. |
| School of Dentistry | 350 | 2 | 352 | 320 | 5 | 325 |
| School of Law | 214 | 6 | 220 | 248 | 10 | 258 |
| School of Medicine..... | 432 | 12 | 444 | 410 | 12 | 422 |
| School of Nursing..... | ... | 119 | 119 | ... | 125 | 125 |
| School of Pharmacy..... | 264 | 21 | 285 | 270 | 21 | 291 |

Total Academic Year,

| | | | | | | |
|-------------------------|------|-----|------|------|-----|------|
| Less Duplications | 1258 | 160 | 1418 | 1248 | 173 | 1421 |
|-------------------------|------|-----|------|------|-----|------|

Summer School:

| | | | | | | |
|---------------------------|----|-----|----|----|-----|----|
| School of Dentistry | 40 | ... | 40 | 23 | ... | 23 |
| School of Medicine..... | 17 | ... | 17 | 46 | 1 | 47 |
| School of Pharmacy | 34 | 6 | 40 | 48 | 5 | 53 |

| | | | | | | |
|--------------------------|----|---|----|-----|---|-----|
| Total Summer School..... | 91 | 6 | 97 | 117 | 6 | 123 |
|--------------------------|----|---|----|-----|---|-----|

Total Baltimore,

| | | | | | | |
|-------------------------|------|-----|------|------|-----|------|
| Less Duplications | 1270 | 162 | 1432 | 1257 | 174 | 1431 |
|-------------------------|------|-----|------|------|-----|------|

Grand Total All Courses,

| | | | | | | |
|-------------------------|------|------|------|------|------|------|
| Less Duplications | 4037 | 2358 | 6395 | 3713 | 2518 | 6231 |
|-------------------------|------|------|------|------|------|------|

Enrollment in First Year Classes

COLLEGE PARK

| | 1934-35 | 1935-36 |
|------------------------|---------|---------|
| Agriculture..... | 64 | 70 |
| Arts and Sciences..... | 304 | 389 |
| Education | 62 | 79 |
| Engineering | 115 | 112 |
| Home Economics | 49 | 53 |
| Total..... | 594 | 703 |

BALTIMORE

| | 1934-35 | 1935-36 |
|-----------------|---------|---------|
| Dentistry | 74 | 69 |
| Law | 81 | 113 |
| Medicine | 115 | 95 |
| Nursing | 55 | 56 |
| Pharmacy | 96 | 90 |
| Total..... | 421 | 423 |

GEOGRAPHICAL DISTRIBUTION OF STUDENTS REGISTERED
DURING REGULAR ACADEMIC YEAR FOR RESIDENT
COLLEGIATE COURSES

| | COLLEGE PARK | | BALTIMORE | |
|---------------------------|--------------|---------|-----------|---------|
| | 1934-35 | 1935-36 | 1934-35 | 1935-36 |
| Alabama | .. | .. | 1 | 1 |
| California | 2 | 1 | .. | .. |
| Connecticut | 9 | 17 | 64 | 59 |
| Delaware | 8 | 7 | 7 | 9 |
| District of Columbia..... | 546 | 517 | 20 | 23 |
| Florida | 3 | .. | 1 | 3 |
| Georgia | 1 | 4 | 3 | 4 |
| Illinois | .. | 1 | 1 | 2 |
| Indiana | 1 | .. | .. | .. |
| Iowa | .. | .. | 1 | 1 |
| Kentucky | 1 | 2 | 1 | 1 |
| Maine | .. | .. | 5 | 3 |
| Maryland | 1272 | 1336 | 886 | 960 |
| Massachusetts | .. | 1 | 22 | 17 |
| Michigan | 2 | 2 | 1 | .. |
| Minnesota | 1 | 1 | .. | .. |
| Missouri | 1 | .. | 1 | 1 |
| Montana | 1 | 1 | 1 | 1 |
| Nebraska | 2 | .. | .. | .. |
| New Hampshire | .. | 1 | 4 | 4 |
| New Jersey | 37 | 48 | 123 | 90 |
| New York | 58 | 66 | 59 | 58 |
| North Carolina | 3 | 3 | 37 | 30 |
| Ohio | 5 | 4 | 2 | 1 |
| Oklahoma | 1 | .. | .. | .. |
| Pennsylvania | 22 | 26 | 71 | 60 |
| Rhode Island | 1 | 1 | 15 | 14 |
| South Carolina | .. | 3 | 8 | 6 |
| South Dakota | .. | .. | 2 | 2 |
| Tennessee | .. | 3 | 1 | 1 |
| Texas | 2 | 1 | 2 | 1 |
| Utah | .. | .. | 5 | 2 |
| Vermont | .. | .. | 6 | 4 |
| Virginia | 16 | 10 | 24 | 23 |
| Washington | 1 | 2 | .. | .. |
| West Virginia | 4 | 3 | 30 | 31 |
| Wisconsin | .. | .. | 1 | 1 |
| Wyoming | .. | 1 | .. | .. |
| Canal Zone | .. | .. | 2 | 1 |
| Puerto Rico | .. | 2 | 6 | 5 |
| British West Indies..... | .. | .. | 2 | 1 |
| Canada | .. | .. | 1 | .. |
| Chile | .. | 1 | .. | .. |
| China | 1 | 1 | .. | .. |
| Columbia | 1 | .. | 1 | 1 |
| Iceland | .. | .. | 1 | .. |
| | 2002 | 2066 | 1418 | 1421 |

ENROLLMENTS DURING REGULAR ACADEMIC YEAR

IN REGULAR COURSES

| | BALTIMORE | | | | | |
|--------------|------------------|-------------|------------------|---------------|-------------|---------------|
| | Regular Academic | | | Summer School | | |
| | Year | Enrollments | Regular Academic | Year | Enrollments | **GRAND TOTAL |
| COLLEGE PARK | | | | | | |
| 1920-21 | 522 | 208 | 730 | 1048 | 1048 | 1778 |
| 1921-22 | 701 | 380 | 1081 | 1436 | 1436 | 2517 |
| 1922-23 | 885 | 446 | 1331 | 1877 | 1877 | 3208 |
| 1923-24 | 960 | 452 | 1412 | 2230 | 2230 | 3642 |
| 1924-25 | 978 | 486 | 1464 | 2330 | 2332 | 3846 |
| 1925-26 | 1064 | 454 | 1518 | 2107 | 2143 | 3661 |
| 1926-27 | 1139 | 477 | 1616 | 1605 | 1605 | 3221 |
| 1927-28 | 1194 | 572 | 1766 | 1527 | 1527 | 3293 |
| 1928-29 | 1287 | 626 | 1913 | 1543 | 1543 | 3456 |
| 1929-30 | 1410 | 721 | 2131 | 1388 | 1388 | 3519 |
| 1930-31 | 1571 | 745 | 2316 | 1446 | 1594 | 3910 |
| 1931-32 | 1871 | 927 | 2798 | 1517 | 1654 | 4452 |
| 1932-33 | 2000 | 1033 | 3033 | 1508 | 1617 | 4680 |
| 1933-34 | 1914 | 840 | 2754 | 1487 | 1606 | 4360 |
| 1934-35 | 2002 | 1016 | 3018 | 1420 | 1517 | 4635 |
| 1935-36 | 2066 | 979 | 3045 | 1421 | 1544 | 4589 |
| 1936-37 | *2275 | 1077 | *3352 | *1265 | 1422 | *4774 |

* As of January 25, 1937.

** Duplications have not been deducted.

° Last year of School of Commerce.

DEGREES AND CERTIFICATES

| | 1934-35 | | 1935-36 | | Total for Biennium | |
|---|------------|-----------|------------|-----------|--------------------|------------|
| | Men | Women | Men | Women | Men | Women |
| Honorary Degrees: | | | | | | |
| Doctor of Engineering..... | .. | .. | 1 | .. | 1 | .. |
| Doctor of Laws..... | 1 | .. | .. | .. | 1 | .. |
| Doctor of Letters..... | .. | .. | 1 | .. | 1 | .. |
| Total Honorary Degrees..... | 1 | .. | 2 | .. | 3 | .. |
| Advanced Degrees: | | | | | | |
| Graduate School: | | | | | | |
| Doctor of Philosophy..... | 20 | 1 | 20 | .. | 40 | 1 |
| Master of Arts..... | 16 | 9 | 8 | 7 | 24 | 16 |
| Master of Science..... | 23 | 3 | 15 | 4 | 38 | 7 |
| College of Engineering: | | | | | | |
| Civil Engineering | 3 | .. | 3 | .. | 6 | .. |
| Electrical Engineer | 1 | .. | .. | .. | 1 | .. |
| Mechanical Engineer | 1 | .. | .. | .. | 1 | .. |
| Total Advanced Degrees..... | 64 | 13 | 46 | 11 | 110 | 24 |
| Bachelors' Degrees: | | | | | | |
| College of Agriculture: | | | | | | |
| Bachelor of Science | 42 | 2 | 37 | 4 | 79 | 6 |
| College of Arts and Sciences | | | | | | |
| Bachelor of Arts..... | 57 | 19 | 63 | 22 | 120 | 41 |
| Bachelor of Science..... | 46 | 4 | 38 | 1 | 84 | 5 |
| College of Education | | | | | | |
| Bachelor of Arts..... | 8 | 16 | 8 | 17 | 16 | 33 |
| Bachelor of Science..... | 21 | 18 | 31 | 24 | 52 | 42 |
| College of Engineering | | | | | | |
| Bachelor of Science..... | 61 | .. | 46 | .. | 107 | .. |
| College of Home Economics..... | | | | | | |
| Bachelor of Science..... | .. | 25 | .. | 14 | .. | 39 |
| Total Bachelors' Degrees..... | 235 | 84 | 223 | 82 | 458 | 166 |
| Total Degrees in Course, College Park. | 299 | 97 | 269 | 93 | 568 | 190 |
| Certificates and Diplomas: | | | | | | |
| Honorary Certificate of Merit..... | 3 | .. | 3 | .. | 6 | .. |
| Teachers' Diplomas | 18 | 32 | 17 | 24 | 35 | 56 |

BALTIMORE

| | 1934-35 | | 1935-36 | | Total for Biennium | |
|---|---------|-------------|---------|-------------|--------------------|-------------|
| | Men | Women Total | Men | Women Total | Men | Women Total |
| School of Dentistry | | | | | | |
| Doctor of Dental Surgery..... | 86 | 86 | 78 | 1 | 164 | 1 |
| School of Law | | | | | | |
| Bachelor of Laws..... | 44 | 44 | 46 | 2 | 90 | 2 |
| Certificates of Proficiency..... | 2 | 2 | 4 | .. | 6 | 6 |
| School of Medicine | | | | | | |
| Doctor of Medicine | 104 | 105 | 97 | .. | 201 | 1 |
| School of Nursing | | | | | | |
| Graduate in Nursing..... | .. | 27 | .. | 25 | .. | 52 |
| School of Pharmacy | | | | | | |
| Bachelor of Science in Pharmacy..... | 18 | 22 | 56 | 2 | 74 | 6 |
| Graduate in Pharmacy..... | 14 | 17 | .. | .. | 14 | 3 |
| Total Degrees and Certificates in Balto... | 268 | 35 | 281 | 30 | 549 | 65 |
| Grand Total, Degrees and Certificates, College Park and Baltimore..... | 589 | 164 | 572 | 147 | 1161 | 311 |
| | | | | | | 1472 |

MEMBERS OF STAFF ENGAGED IN INSTRUCTION

COLLEGE PARK

1934-1935

| | Agriculture | Arts and Sciences | Education | Engineering | Physical Education | Home Economics | Military | School Specials | Extension Edu. | Engr. | Total Less Duplications |
|----------------------------|-------------|-------------------|-----------|-------------|--------------------|----------------|----------|-----------------|----------------|-------|-------------------------|
| Professors | 18 | 16 | 7 | 4 | 1 | 1 | 1 | .. | 1 | .. | 47 |
| Lecturers | 3 | .. | .. | 1 | .. | .. | .. | .. | .. | .. | 4 |
| Associate Professors | 6 | 7 | .. | 1 | .. | 1 | .. | .. | .. | .. | 15 |
| Assistant Professors | 6 | 10 | 1 | 4 | .. | 1 | 3 | .. | .. | .. | 25 |
| Instructors | 2 | 12 | 7 | .. | 2 | 2 | .. | 30 | 14 | 1 | 69 |
| Assistants | 6 | 10 | 1 | 1 | 1 | 1 | .. | .. | .. | .. | 20 |
| Graduate Assistants | 5 | 11 | 1 | .. | .. | .. | .. | .. | .. | .. | 17 |
| Fellows | 4 | 7 | .. | .. | .. | 1 | .. | .. | .. | .. | 12 |
| Miscellaneous | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | 2 |
| Student Assistants | .. | 1 | .. | 5 | .. | .. | .. | .. | .. | .. | 6 |
| Totals | 51 | 75 | 17 | 16 | 7 | 4 | 4 | 30 | 15 | 1 | 217 |

1935-1936

| | Agriculture | Arts and Sciences | Education | Engineering | Physical Education | Home Economics | Military | School Specials | Extension Edu. | Engr. | Total Less Duplications |
|----------------------------|-------------|-------------------|-----------|-------------|--------------------|----------------|----------|-----------------|----------------|-------|-------------------------|
| Professors | 18 | 23 | 8 | 5 | 2 | .. | 1 | .. | 1 | .. | 54 |
| Lecturers | 3 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 3 |
| Associate Professors | 6 | 7 | .. | 2 | 1 | .. | .. | .. | .. | .. | 16 |
| Assistant Professors | 5 | 13 | 1 | 3 | 1 | .. | 3 | .. | .. | .. | 26 |
| Instructors | 2 | 19 | 4 | .. | 2 | 2 | .. | 27 | 18 | 1 | 74 |
| Assistants | 4 | 6 | 1 | 1 | .. | .. | .. | .. | .. | .. | 12 |
| Graduate Assistants | 7 | 10 | .. | .. | 2 | .. | .. | .. | .. | .. | 19 |
| Fellows | 3 | 11 | .. | .. | .. | .. | .. | .. | .. | .. | 14 |
| Miscellaneous | 2 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | 3 |
| Student Assistants | .. | 2 | .. | 5 | 1 | 1 | .. | 2 | .. | .. | 11 |
| Totals | 50 | 92 | 14 | 16 | 9 | 4 | 4 | 29 | 19 | 1 | 232 |

OFFICERS OF INSTRUCTION (Baltimore Schools)

1934-1935

1935-1936

| | Arts and Sciences | Dentistry | Law | Medicine | Nursing | Phar- macy | Total Less Duplica- tions | Arts and Sciences | Dentistry | Law | Medicine | Nursing | Phar- macy | Total Less Duplica- tions |
|----------------------|----------------------|-----------|-----|----------|---------|---------------|---------------------------------|----------------------|-----------|-----|----------|---------|---------------|---------------------------------|
| Professors Emeriti.. | .. | 1 | 1 | 5 | 1 | 1 | 9 | .. | 1 | 1 | 6 | 1 | 1 | 10 |
| Professors..... | *3 | 10 | 5 | 52 | .. | 4 | 72 | *3 | 10 | 5 | 51 | .. | 4 | 84 |
| Associate Professors | 1 | .. | .. | 25 | .. | 2 | 28 | 1 | .. | .. | 30 | .. | 2 | 33 |
| Assistant Professors | 4 | 10 | .. | 23 | 1 | 2 | 40 | 1 | 10 | 1 | 29 | 1 | 2 | 47 |
| Lecturers..... | .. | 4 | 12 | 1 | .. | .. | 17 | .. | 4 | 14 | 3 | .. | .. | 21 |
| Associates..... | .. | .. | .. | 48 | .. | .. | 48 | .. | .. | .. | 44 | .. | .. | 44 |
| Instructors..... | 6 | 40 | 1 | 46 | 5 | 7 | 105 | 6 | 39 | .. | 53 | 5 | 7 | 109 |
| Assistants..... | 5 | .. | .. | 64 | 2 | 9 | 80 | 5 | .. | .. | 87 | 7 | 13 | 112 |
| Totals..... | 19 | 65 | 19 | 264 | 9 | 25 | 395 | 19 | 64 | 21 | 306 | 14 | 29 | 446 |

*Duplication of College Park Faculty.

STUDENT CREDIT HOURS OF RESIDENT INSTRUCTION BY
DEPARTMENTS AT COLLEGE PARK REGULAR SCHOOL YEAR

| Department | 1934-1935 | 1935-1936 |
|----------------------------------|---------------|---------------|
| Agricultural Economics | 483 | 441 |
| Agronomy and Soils | 278 | 281 |
| Animal Husbandry | 258 | 212 |
| Astronomy | 30 | ... |
| Bacteriology | 1097 | 1377 |
| Botany | 1605 | 1727 |
| Chemistry | 6676 | 6760 |
| Dairy Husbandry | 260 | 268 |
| Economics | 3808 | 3426 |
| Education | 2191 | 1849 ½ |
| Engineering | 4020 | 3867 |
| English | 6621 | 7049 |
| Entomology | 542 | 525 |
| Farm Management | 22 | 19 |
| Farm Mechanics | 125 | 102 |
| Forestry | 30 | ... |
| Genetics | 323 | 365 |
| Geology | 138 | 156 |
| Greek and Latin..... | 45 | 12 |
| History | 3351 | 3855 |
| Home Economics | 1655 | 2122 |
| Home Economics Education..... | 237 | 238 ½ |
| Horticulture | 459 | 356 |
| Library Science | 234 | 307 |
| Mathematics | 3808 | 4515 |
| Military Science | 2311 | 2468 |
| Modern Language | 4340 | 4130 ½ |
| Music | 161 | 173 ½ |
| Philosophy | 522 | 484 |
| Physical Education (Men) | 469 | 489 |
| Physical Education (Women) | 956 ½ | 1248 |
| Physics | 1844 | 1792 |
| Political Science | 874 | 1281 |
| Poultry Husbandry | 60 | 69 |
| Psychology | 695 | 777 |
| Public Speaking | 1787 ½ | 1826 |
| Rural Life and Education..... | 109 | 112 |
| Sociology | 1703 | 2024 |
| Zoology | 2405 | 2706 |
| Totals | 56,533 | 59,410 |

Office of Dean of Women

ADELE STAMP, *Dean*

THE office of Dean of Women is both an administrative and a personnel office. The aim of the Department is to practice and perfect ideals of human relationships as well as the handling of administrative duties. The business of this Office is the welfare of women students from every angle—academic, social, and vocational. The Dean deals with the student as an individual and her work is based on a careful study of interests, abilities and needs of each student. She works with, not upon, students and her program is one of constructive, cooperative guidance. She deals with the student as an individual, with the stream of life that flows in and out of the University.

The accomplishments are intangible and difficult to show in black and white since their chief values lie in human relationships. The aim for this biennium has been to make physical environment as comfortable and as attractive as possible, and to help the student understand and fit into her environment, and to guide her in her choice of studies. This guidance and counseling is an important part of the Dean of Women's duties. During the year 1935-1936 there were 635 women students on our campus and it meant, by actual count, 9 hours per week each semester given to guidance and counseling of individual students. Eight hours per week were spent in the initial 20 minutes interview with each student; the additional hour, in difficult cases of adjustment. Two or more interviews are essential, and problem cases require many more. The work corresponds to teaching and is counted as such in other institutions in measuring the teaching load of the department.

A record of each interview is kept in the personal folder of each individual student. Besides making a contact with the student and offering an opportunity for the Dean and student to know each other as persons, a large amount of valuable information as far as the student is concerned, must be gleaned in this interview. Consequently, only a person trained in this technique can accomplish worthwhile results without waste of time. It is teaching of the most intensive kind, since the twenty minutes spent with each student must be productive of fruitful results. Since this is only one of the multitudinous duties of the Dean, more time cannot be given to it without neglect of other duties which are equally important. The success with which it has been met demonstrates its need, and the addition to the Dean's office of a well-trained person in this field is essential. An increased enrollment in 1936-37 will call for additional time for guidance, and since 20 hours per week could well have been spent in counseling this year, it is not rash to expect 22 hours per week to be spent in 1936-37.

Keeping records of individual students which contain accurate, concise and sufficient information is an important division of the work of the Dean's office. Our system showed great improvement this year in both efficiency and completeness of our records. The folder for each individual girl contains her picture, her college academic record, result of her aptitude test, a list of her extra-curricular activities, her case history, a record of her physical examination for each year, and a record of any illness and treatment.

The early part of the school year, 1935-36, Margaret Brent dormitory was filled to overflowing. Even the social hall was turned into a temporary dormitory for nine weeks. However, the girls felt fully repaid for their crowded conditions when they moved into the new dormitory the end of November, 1935. It is a very attractive and satisfactory building both architecturally and as a physical plant.

The outstanding need in this Department is a Social Director who would be responsible for the social program in both dormitories. She should be chosen carefully as her work is valuable and far reaching in determining the social attitudes and habits of students. She would teach the students to live fully, and to make the proper kind of social contacts with both men and women.

Practically all state supported institutions have a Social Director for each dormitory housing 100 or more students in addition to the head of the hall. We house 240 girls in our two residence halls, and a Social Director would be expected to devise and carry out an ample and satisfying program of social activities. She would also act as an official chaperon at University dances, giving reports as to their conduct and offering suggestions for their improvement.

We now have 180 girls living off the campus, and some supervision of the places where they live must be made. An inspection is made of each house before students are placed there and the house rated as to cleanliness, size of room, ventilation, toilet facilities, heating and lighting facilities, single beds, and number of students housed. The person in charge of the house is asked to cooperate with the Dean's office as to the care of the student, and the enforcement of rules and regulations governing women students. Unexpected visits from the Dean's office should be made five or six times a year in order to check up on these off-campus houses.

Since there are twenty houses besides dormitories where girls are living, the need for additional help in this Department is apparent. The off-campus houses are often unsatisfactory due to misunderstandings between students and owners. Therefore an additional dormitory for women is necessary.

The work of the student organizations has been very satisfactory for the year 1935-36. The Women's League proved itself an effective and competent body in handling problems that arose in connec-

tion with the life of women students. In January, 1937, it published a booklet entitled "To Do or Not To Do", a social blue-book dealing with campus etiquette. Mortar Board, the only National Senior Honor Society for women, is based on scholarship, leadership, and service. Members of the Junior class are elected prior to Commencement by the outgoing Senior members. A brief report of the year's work would not be complete without mention of the very creditable work of Alpha Lambda Delta, Freshman Honor Society for women, the Young Women's Christian Association, Women's Athletic Association, Panhellenic Association, and Daydodgers' Club.

Physical Education is required of all Freshmen and Sophomore women students. It is elective for Juniors and Seniors. The Dean of Women has the supervision of the work of this Department. The program of work for Freshmen and Sophomores consists of sports such as hockey, basketball, volley ball, tennis, archery, and baseball, and natural activities such as tumbling, stunts, games, and folk dancing. In addition, a program of intra-mural games is planned for the Freshmen, Sophomores, Juniors, and Seniors in hockey and basketball. Archery and tennis tournaments are also held. We have added fencing to the list of activities. This is an elective sport for any girl, and it has proved itself very popular. During the past biennium two hockey play days were held with colleges in and near Washington. They were very successful.

A major in Physical Education is offered by this Department. The work for this includes training of teachers for Physical Education in high schools with the necessary practice teaching and supervision.

The Women's Athletic Association aims to promote intra-mural sports, interest in athletics, and good sportsmanship among all the women on the campus. The tennis and archery tournaments were organized and conducted by the Women's Athletic Association. The members of this Association also assisted in the play days, and were in a large measure responsible for their success.

May Day is an annual event which is given by the Junior girls to the Senior girls. Each year a different theme is used. In May, 1936, the theme was a toy shop. The idea was carried out in dances and pantomimes. It was a very picturesque and successful May Day.

The women's rifle team continues to be successful, and in the last biennium won two national championships, that of the highest individual competitor, and the winning team.

The health of every college student is of primary importance. The teaching of the Greeks "sound mind in a sound body" is as true today as it was when uttered. Our health program for women students requires classes in Hygiene for all Freshmen and Sophomores, and a yearly physical examination of all women students. Hygiene

is taught by a competent and wise woman physician who also makes the physical examinations and acts as a health consultant for women students twice a week. Parents are notified of remedial defects and follow-up work is done with students who have faulty health habits and need to correct them. Since our woman physician has had psychiatric training, her aid in the adjustment of problem cases and warped personalities is invaluable.

Physical Education for Men

C. L. MACKERT, *Director*

THE Department of Physical Education in cooperation with the College of Education is now supplying the secondary schools of the State with trained teachers of Physical Education. Before this service was inaugurated, the State Department of Education found it necessary to sanction the employment of teachers in this phase of education who were either entirely lacking in training, or who were trained outside of the State.

Within the University, the Department of Physical Education is making a contribution in the lives of many physical handicapped students. By careful supervision of the activities of these unfortunate young persons, many with functional heart defects have been improved, others with under-developed conditions have been strengthened and made more capable, and still others who are physically impotent have been taught to function acceptably in physical activity of a wide variety.

The contributions from this type of service are dual: Physically the individual is helped to develop strength and efficiency in many activities; and psychologically he is encouraged to take a normal attitude towards his companions and opponents, and towards many types of mental and physical obstacles. In this manner the Department is offering an opportunity for the less fortunate individual to learn to direct his life emotionally, as well as physically, to the end that he may more capably fulfill his mission in the University and in life.

In the field of social and moral conduct, a directed program of recreation is a most significant factor. Moral and social ventures under wise supervision promote a cohesion so necessary among the many groups that comprise any social situation. Through intramural activities, in which a large number of students participate voluntarily, the Department of Physical Education is sponsoring a type of citizenship designed to influence the students to become acceptable leaders in a more wholesome community organization.

The effect of this program on the conduct of the students at the University is evident in the way students act. Rowdyism, hazing and mob violence, which evoked much administrative concern, are traditions that have been replaced in this new era by competitive games and contests of a wholesome nature. The University, today, through the Department of Physical Education, is training leaders who are outstanding in social and moral achievements. This influence is one of the most gratifying results of higher education. It is fulfilling one of the chief aims of the educational program of the State.

Plant Maintenance and Operation

H. L. CRISP, *Superintendent*

THE Plant Maintenance and Operation work of the past two years has been largely one of maintenance and meeting needs of the educational departments.

This may be readily understood when it is realized that two new buildings were added to the college group with no increase in the number of trade mechanics nor in the funds for alterations and repairs.

Dormitory "B" made necessary grading, laying of walks, temporary light lines, sodding, etc.

The completion of Arts and Science building involved likewise landscaping, laying of walks, and the moving and installing of laboratory and classroom equipment previously used in Chemistry, Engineering, and Morrill Hall. Changes and installation of equipment in these old buildings also had to receive attention. Considerable has been accomplished along this line in Engineering. A radio room and Library were fitted up, some new lighting fixtures installed, the building was painted inside and outside and the floors are now being treated.

When funds become available, Morrill Hall is to receive imperative alterations.

A new office was constructed in the Home Economics building, and the interior and exterior of the building completely repainted.

Improvements were made to the old Horticulture building, now used as Student Center, through erection of a portico, changing of partitions, grading of grounds, laying of walks, macadamizing of road leading thereto and in the rear of the boys' dormitories.

It was desirable that Margaret Brent Hall, added to our group of buildings in 1931, be painted throughout. This was done.

A number of other buildings were painted outside, Dining Hall, Girls' Field House, Library, Laundry, Horticulture.

The Dairy building was "revamped" by contract.

Improvements were made here and there, as, another section of hot water lines in Silvester Hall were renewed; new vacuum pump was purchased and installed for the boys' dormitories; wash room was converted into a stock room for Soils Department; incubator room constructed for Bacteriology; screens were constructed for all of Calvert Hall, and like projects.

A new flag pole was erected.

The road north of Margaret Brent Hall was extended around Dormitory "B" to University Lane. A formal garden was put in at Margaret Brent Hall at the suggestion and through the help of the Maryland Federation of Women's Clubs.

Concrete walks were laid to the cafeteria and Dining Hall small dining rooms; fire plugs were installed for the Horticulture and Arts and Sciences buildings.

A new heating boiler is now being installed in our heating plant.

The department is still hoping that some day we may have a service building equipped with shops, storage, etc.

Financial Summary

H. T. CASBARIAN, *Comptroller*

THE University of Maryland and the Maryland State Board of Agriculture receive support from State Appropriations, from the Federal Government and from other sources. This latter item is composed largely of fees collected from students in the several colleges at College Park and the professional schools at Baltimore, fees from patients in the University Hospital and the Dental Clinic, and sales of miscellaneous farm products, etc.

For the two years ended September 30, 1936, the receipts for the several divisions were as follows:

| | 1934-35 | | Student Receipts | Sales and Misc. | Total |
|---------------------------------------|-------------------------|---------------------|---------------------|-----------------------|--------------|
| | State of Maryland | U. S. Government | | | |
| Instruction—Baltimore | 80,602.15 | ..... | 397,124.07 | 62,183.78 | 539,910.00 |
| Instruction and Allied Activities— | | | | | |
| College Park | 222,329.61 | 49,537.02 | 458,370.86 | 209,011.31 | 939,248.80 |
| University Hospital | 115,000.00 | ..... | ..... | 340,353.62 | 455,353.62 |
| Research | 61,080.00 | 90,000.00 | ..... | 26,079.10 | 177,159.10 |
| Extension | 126,994.27 | 123,552.49 | ..... | 26,750.56 | 277,297.32 |
| Public Service and Regulatory | | | | | |
| State Dept. of Forestry..... | 48,750.12 | 12,562.14 | ..... | 42,826.92 | 104,139.18 |
| Md. Geological Survey..... | 16,375.55 | ..... | ..... | 782.24 | 17,157.79 |
| Md. State Weather Service..... | 2,639.94 | ..... | ..... | ..... | 2,639.94 |
| Live Stock Sanitary Service..... | 100,966.48 | ..... | ..... | ..... | 100,966.48 |
| Princess Anne Academy—Negro..... | 15,672.00 | 8,500.00 | 2,198.85 | 6,877.23 | 33,248.08 |
| Student Activities and Athletics..... | ..... | ..... | 59,556.56 | ..... | 59,556.56 |
| Total | 790,410.12 | 284,151.65 | 917,250.34 | 714,864.76 | 2,706,676.87 |
| Percentage to total..... | 29% | 11% | 34% | 26% | |

| | 1935-36 | | Student Receipts | Sales and Misc. | Total |
|---------------------------------------|-------------------------|---------------------|---------------------|-----------------------|--------------|
| | State of Maryland | U. S. Government | | | |
| Instruction—Baltimore | 67,603.67 | ..... | 380,694.90 | 50,097.20 | 498,395.77 |
| Instruction—College Park | 226,991.08 | 88,137.38 | 531,433.47 | 216,601.80 | 1,063,163.73 |
| University Hospital and | | | | | |
| Nurses Training School | 105,000.00 | ..... | ..... | 409,418.97 | 514,418.97 |
| Research | 53,874.00 | 100,706.43 | ..... | 30,917.69 | 185,498.12 |
| Extension | 110,640.00 | 232,692.58 | ..... | 36,049.03 | 379,381.61 |
| Public Service and Regulatory | | | | | |
| State Department of Forestry..... | 47,010.25 | 12,494.14 | ..... | 50,479.32 | 109,983.71 |
| Md. Geological Survey..... | 11,721.00 | ..... | ..... | 973.75 | 12,694.75 |
| Md. State Weather Service..... | 2,000.00 | ..... | ..... | ..... | 2,000.00 |
| Live Stock Sanitary Service..... | 97,873.00 | ..... | ..... | ..... | 97,873.00 |
| Princess Anne Academy—Negro..... | 15,513.00 | 16,430.63 | 2,776.20 | 5,839.68 | 40,559.51 |
| Student Activities and Athletics..... | ..... | ..... | 65,442.11 | ..... | 65,442.11 |
| Total | 738,226.00 | 450,461.16 | 980,346.68 | 800,377.44 | 2,969,411.28 |
| Percentage to total | 25% | 15% | 33% | 27% | |

Following are the disbursements for each of the two years of the biennium, by major divisions:

| | 1934-35 | 1935-36 |
|---|--------------|--------------|
| Instruction—Baltimore | 538,326.11 | 527,455.07 |
| Instruction—and Allied Activities— | | |
| College Park | 929,997.69 | 981,842.16 |
| University Hospital and Nurses Training | | |
| School | 449,907.14 | 500,921.86 |
| Research | 174,045.50 | 188,885.80 |
| Extension | 299,266.57 | 345,923.79 |
| Public Service and Regulatory: | | |
| State Department of Forestry..... | 109,660.31 | 104,444.32 |
| Maryland Geological Survey..... | 16,325.79 | 13,986.59 |
| Maryland State Weather Service..... | 2,339.94 | 1,955.43 |
| Live Stock Sanitary Service..... | 103,542.17 | 99,529.33 |
| Princess Anne Academy..... | 32,524.81 | 37,149.99 |
| Student Activities and Athletics..... | 58,852.78 | 60,509.94 |
| Total..... | 2,714,188.81 | 2,862,604.28 |

On July 1, 1935, an additional appropriation, under the Federal Bankhead-Jones Act, became available. Under the terms of this Act the appropriation will be gradually increased, each year, for a period of five years. The maximum appropriation will then be distributed as follows: For education \$39,952, for research \$36,688, for extension \$105,496. It is anticipated that this will become a permanent appropriation. The appropriation for education is to give colleges additional support for the benefit of agriculture and the mechanic arts and must be divided between white and negro education in proportion to population. Expenditures are restricted to the provisions of the Morrill Nelson Act of July 2, 1862, as amended and supplemented. Funds provided in the Act for agricultural research must be fully offset by the state and research projects for which these funds will be used must meet the approval of the United States Department of Agriculture. The Act provides for additional cooperative agricultural extension work between the State and the United States Government. Extension projects under this Act must be approved by Federal authorities.

The proceeds of the State Bond issues of 1931 to the extent of \$50,280 and of 1933 of \$350,000 supplemented by a Federal Public Works Administration grant of \$157,000, made it possible to substantially complete three building projects. The approximate costs of these buildings are as follows: Women's Dormitory, including equipment and approach road, \$209,200, Arts & Sciences Building, including equipment and landscaping, \$297,500, and remodeling the Dairy Husbandry building \$50,425. These buildings are now in use and there remain only a few minor additions to complete them.

During the biennium, marked improvements have been made in our budgeting methods resulting in better administrative control,

and more being accomplished for each dollar expended. A detailed study has been made of the business and service activities of the several departments in College Park and Baltimore. This study revealed the need for centralized control of these activities in one office in order to carry on the business affairs on a more effective basis. Arrangements are being made to effect the reorganization by October 1, 1937.

Princess Anne Academy

R. A. GRIGSBY, *Acting Dean*

Princess Anne Academy started fifty-one years ago 1886, in one building, as the Delaware Conference Academy.

Subsequently the Maryland State College of Agriculture, now a part of the University of Maryland, wishing to provide instruction for Negro youth in accordance with the provisions of the Morrill Act and later acts of Congress, contracted with the trustees of Morgan College, the owners of the Academy, to provide the requisite instruction for Negro youth.

Under the terms of an act of the Legislature of Maryland a per centum of the Morrill Fund equal to the per centum of the Negro population of the State is allocated to the Academy. In addition the Academy receives a State Appropriation and is now recognized as the Land Grant Institution for Negroes in Maryland.

The courses of study were modified and expanded to meet the requirements of the Federal Government. Additional land was purchased and a beginning made in systematic instruction of the Negro youth in agriculture and industrial subjects and in home economics. The school prospered by this arrangement, and the needs of the State in some degree were met thereby.

For the first twenty-five years it was difficult, indeed impossible, to secure students beyond the high school grade or even in the high school grade, in such numbers as to warrant the continuance of the classes. With the improvement in public education and with the establishment of high schools for Negroes, a constantly advancing grade of students has been secured. In September, 1925, the Junior College Department was established, which lays the foundation for the B.S. degree in agriculture and home economics.

Princess Anne Academy comprises 200 acres of fertile land of which more than 150 acres are under cultivation and more than 15 acres make up the beautiful rolling campus.

A complete soil survey was made by the agronomy division of the University of Maryland and the members of the agricultural staff cooperating. Maps, charts and a crop rotation system were planned. Other improvements made:

1. The poultry plant transferred from a low poorly drained soil to a high well drained soil. One Maryland type laying house 20 inches by 100 feet, and three brooder houses were constructed on the new site.
2. A new corn crib and granary was constructed.
3. Adult Short Course established.
4. Two pure bred hampshire sows were added to the swine herd.
5. Wheat barley and rye seeds were sold to the farmers. This service has continued from year to year.
6. First Camp and Judging Contest for vocational Agricultural students.
7. Pure bred pigs made available to the farmers and students in seasons.
8. A new greenhouse was constructed by our staff to the right of the front entrance.
9. A new Hammer mill was installed to mill our live stock feed.
10. All farm buildings were electric lighted.
11. All birds blood tested and certified by the Maryland Live Stock and Sanitary Board. We are now members of the Maryland Poultry Association.
12. Scholarships awarded by the school to graduates from our two-year college course. This enabled them to finish the last two years of their training at about the same as it would cost at Princess Anne.
13. Live Stock Projects established for college students.

Princess Anne Academy's secondary school and junior college have laid the basis for future training and successful services of hundreds of men and women as ministers, doctors, teachers, farmers, etc. In all of these fields Princess Anne Academy graduates have taken high rank.

The school year, 1936, marked the beginning of senior college curricula offered in Agriculture, Home Economics, and Industrial Arts, leading to the degree of bachelor of science with enough courses in professional education to qualify graduates for the position of teachers in vocational subjects in high schools for Negroes.

Three of our graduates having completed their B.S. degree courses in other institutions, were placed in the State as teachers of vocational agriculture in high schools, the fall of 1936.

